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W. E. MUSGRAVE, M. D.
CELESTINE J. SULLIVAN

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No. 11

MORE ABOUT THE YOSEMITE MEETING

This is a continuation of the editorial in the October number of the Journal, relating to the Yosemite meeting. If you have not read that editorial please do so.

Transportation and Hotels: All matters of every description regarding any phase of transportation or hotel accommodations have been placed in the hands of a committee representing the Yosemite Transportation Committee and the State Medical Society. The personnel of this committee is as follows:

Mr. H. H. Hunkins, Traffic Manager, Yosemite Transportation Co., 637 Pacific Building, San Francisco, Chairman of the Committee.

Dr. James H. Parkinson, 1601 I Street, Sacramento.

Dr. Morton Gibbons, 350 Post Street, San Francisco.

Dr. Paul M. Carrington, 809 Watts Building, San Diego.

Dr. T. C. Edwards, Salinas.

Dr. William H. Kiger, 711 Pacific Mutual Building, Los Angeles.

Mr. R. E. McCormack, Chief Clerk, Yosemite Transportation Co., 637 Pacific Building, San Francisco, Secretary of the Committee.

The Publicity Committee has an announcement which appears on page 446 of this Journal. Please read it.

There will be ample accommodations for every person who wishes to attend the meeting in Yosemite. The earlier the reservation, the more certain you will be to get what you want. Write to Mr. Hunkins' office without delay, stating your needs. At the same time ask the same committee regarding your transportation. The railroad companies are making provision whereby tickets may be purchased to Yosemite and return home, or they may be purchased to St. Louis for the A. M. A. convention, with stopover privileges of four days in Yosemite. The rates will be such as the railroad companies can arrange for under the rules of the association of terminal lines and as provided for by the Railroad Commission.

The committee on transportation and hotels will have its offices at 637 Pacific Building, San Francisco, and in ample time will transfer these offices to Yosemite Park. In the Yosemite office there will be present during the convention a representative of all the railroads, with power to visit and make necessary changes in tickets or to sell tickets.

Do not forget that the meeting is Monday to Thursday, the 15th to 18th of May.

The program will be published in February and those interested in contributing papers should address the secretary of the appropriate section (list published on page 447 of this Journal) without delay.

Any question or problem of any description should be promptly communicated to the Secretary of the State Society.

ABOUT "FEE SPLITTING"

There is a growing confusion and not a little misunderstanding in the minds of many physicians regarding "fee splitting." The evidence seems to indicate a certain amount of definite encouragement of both the confusion and the misunderstanding.

The Principles of Ethics very specifically and quite properly condemns the *secret* division of a fee. It is also unprofessional to give or receive a commission. In other words, it is degrading and unprofessional for a physician to be a party to any transaction that permits payment for anything except for services rendered to the patient. On the other hand, each and every physician actually rendering service to any patient is entitled to share in whatever compensation is available for the composite service. The Principles of Ethics specifically provide for this situation in the latter part of Section 3 of Article VI:

"It is also unprofessional to divide a fee for medical advice or surgical treatment, unless the patient or his next friend is fully informed as to the terms of the transaction. The patient should be made to realize that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient."

This section provides quite definitely for divisions of a fee, protects the family physician in charge of the patient and the patient or person who pays the bill. It quite definitely provides that the patient must be fully informed of the arrangements for the division of the fee among all those who have served, and intimates with sufficient clarity that the family physician should assume a responsible role in such transactions.

There is nothing that is confusing or difficult to understand in our ethics. They condemn *secrecy* in the apportionment of earned fees; condemn

the payment of fees from any person to any other person by rebate, commission or in any other manner for any purpose, except professional services rendered, and they provide a perfectly clear method by which each and every physician rendering service may have his earned share of whatever funds are available for the purpose.

With these facts before the profession, there is nothing surprising in the growing resentment that is being expressed against any person or organization that condemns the proper division of fees in accordance with the expressed ethics. The actions of some few who have been attributing virtue to themselves by keeping the whole fee, where service has been rendered by more than one physician, under close analysis are found to be in violation of the letter and spirit of our published ethics and their policy open to the criticism of fundamental selfishness.

"EVANGELISTS" OF SORTS

This appears to be the season for evangelists (?) in California. Some of these sensational, notoriety seeking psychopaths ought to have the attention of our sane community service organizations. The charlatans of the past were usually both religion and health fakers, acrobatic in gesture, strong in voice, with little regard for the truth and often ignorant. History is repeating. Today, as yesterday, they practice medicine behind a cloak of false religion rather than with a license based upon education, and they play upon the prejudices, jealousies and shortcomings of the emotionally inclined persons who go to hear them. They always leave behind them an exhausted, disappointed group of "believers" and a lot of jealousies that are hardly healed before another of their kind appears to reopen the wounds.

It is difficult to understand how so many of these psychopaths get permission to operate their circuses under the cloak of religious denominations that we have all been taught from childhood to respect.

MONKEY TESTICLES AND "LOST MANHOOD"

Certain elements of the public press and a few physicians who have apparently traded their ideals and ethics for temporary public notoriety are out to restore the sexual powers of a lot of old men by the transplantation of monkeys' testicles. The next step in this circus type of research probably will be to use the ovaries of the female ring-tailed monkey to restore the sexual powers of jaded women. We are due to read a lot about "hormones" and a lot of other hypothetical substances before we see the last of this propaganda, unless the financial response from the public fails to warrant a continuance of the "experiments" and the advertising. It is interesting to speculate upon the future influence of the "monkeyized" group of our fellow citizens upon such important questions as reform in dress and the determination of parentages. Speculations regarding its effect upon posterity by these would-be youthfulness we leave for consideration by eugenic societies.

AN ANATOMICAL STUDY OF EIGHT CASES OF DEGENERATION OF THE CORNEA.

By CHARLES MAGHY, M. D., Chicago.

Under the title "Degeneration of the Cornea" we distinguish chiefly four forms—hyaline, calcareous, colloid, and amyloid. These degenerations have already been considered clinically and histologically by many authors, whose opinions regarding their origin and the mode of formation do not coincide. Moreover, the homogeneous, highly refractile, organic degenerative material, which appears clinically as yellow spots in the cornea, has been termed by different authors: colloid, hyaline, and amyloid, respectively.

I will first mention briefly the hitherto expressed important opinions of the origin and mode of formation of this material.

Degeneration of the cornea was first described by Baselin as amyloid, in an eye that was staphylomatous. He found in the superficial layers of the scar of the human cornea peculiar, highly refractive, organic masses of various shapes, not unlike those pictures which Goldzieher, Saemesch, Wedl and Bock described as colloid of the cornea, which, however, with a 2 per cent iodine solution gave the typical amyloid reaction. Baselin is of the opinion that the refractile masses are in no way related to cells of the epithelial layer, and when found in this situation have invaded the same from the stroma cornea below.

E. von Hippel arrived at the same conclusions regarding the amyloid reaction. He regarded the refractile masses as taking their origin from altered red blood cells.

Saemesch described in the epithelial layer and in the scar tissue of the cornea the appearance of rounded, drop-like and faceted cavities with thickened walls, formed by material which had a strong light-refracting capacity, which might be considered colloid bodies.

Goldzieher described in a scar staphyloma immense accumulations of colloid in the superficial layers of the cornea.

Wedl and Bock mentioned the appearance of colloid bodies in the cornea of eyes that showed nutritional changes.

Schiele considered the refractile masses were not of an amyloid nature, but were composed of glycogen.

Kamocki claimed the homogeneous, strongly refracting globules were hyaline in nature, from the manner in which they stained.

Baquis expressed the opinion that colloid and amyloid might have the same origin, or at least bore a close relationship. In his opinion the colloid material took its origin from the epithelial cells, or from the fluid circulating in the cornea.

Vossius considered the calcareous deposits were secondary to an inflammatory growth of the connective tissues, the refractile masses breaking through Bowman's membrane.

Sachsaler concluded that the refractile bodies were always extra cellular and primarily belonged to the cicatricial tissue, and when found in other parts of the cornea, they arrived there secondarily.

Birch Hirschfeld believed the refractile bodies

were hyaline as von Recklinghausen applied the term. This author points out that hyaline is possibly an antecedent stage of amyloid degeneration; this at least would tend to explain the amyloid findings of Baselin and von Hippel as being cases of longer standing.

Wysokowitsch considers hyaline degeneration as a change of the endothelium and its derivatives as well as of the tissues genetically conceded with it, keratohyalin and colloid, as changes of the epithelium, the former of the flat, the latter of the cylindrical.

Rubert does not hesitate to declare the refractile bodies are hyaline and believes Trachoma is associated or has preceded the attack in all cases.

Von Recklinghausen applied the term colloid to all the homogeneous transparent-looking substances, including mucin, colloid and amyloid, and reserved the term hyalin for a special group, which, according to him, is characterized by the following peculiarities: It resembles amyloid in physical characteristics, but does not react to Iodine; it stains deeply with acid dyes, such as eosin and acid fuchsin.

Ernst differentiates two groups of hyaline substances, colloid and hyalin, by means of the reaction to Van Geisen's picro-acid fuchsin solution. According to him, true hyalin stains with acid fuchsin alone and appears a deep red color, while colloid stains with both picric acid and acid fuchsin. He believes hyalin has its origin from the connective tissue or from the blood vessels. Von Kahlden claims that colloid often stains a deep blue.

Unna has shown that in the skin connective tissue cells can give rise to the so-called true hyalin, of which part is acidophilic and part basophilic, while the intercellular substance gives rise to colloid.

According to Fuchs, Zonular Opacity of the cornea is the most frequent of the pathological types of the dystrophies. It forms a grayish band from 3 to 5 mm. broad, which passes straight across the cornea, a little below its center. It develops with extreme slowness, occupying years in its progress, the first parts to appear being the two terminal points of the opaque band; that is, the portions of the opacity lying nearest the upper and inner margins of the cornea. These points are always separated from the margin of the cornea by a narrow, transparent zone. Starting from there the opacity gradually pushes its way toward the middle line, where the two parts of it unite, and thus close in the opaque zone which covers the lower half of the cornea. This zone is, accordingly, broadest and most opaque at its two extremities, these being its oldest parts.

On examining the opacity more closely with a corneal loupe, we ascertain that the opacity, which is sharply defined on all sides, is composed of minute white or grayish dots which lie somewhat superficially in the epithelium or directly beneath it; for this reason we often find the surface of the cornea over the opacity roughened like shagreen or covered with minute prominences. Often in the midst of the opacity we see roughened or rounded areas which are clear, or the opacity is

traversed by fissures or chinks, and portions of the opacity may actually drop off altogether.

Zonular opacity of the cornea generally develops in eyes which have nearly or quite lost their sight in consequence of some intraocular affection (iridocyclitis, glaucoma), and in this case it is of practically little significance. It is only very rarely (and then only in elderly people) that we encounter it in eyes which are otherwise sound, so that here the corneal opacity itself is the sole cause of the disturbance of vision (senile zonular opacity).

PUBLIC HEALTH AND MEDICAL WELFARE

By PHILIP KING BROWN, M. D., San Francisco.

The medical profession is confronted with a series of problems which concern its relation to the community, its welfare and its independence. It has before it the unique position of maintaining the health of the people by preventing disease, of ministering to the sick, rich and poor alike, advancing its standards constantly, resisting overexploitation at every hand by social reformers, economists, and radical legislators, defending itself and the community against the inroads of patent medicine venders, against an almost universally hostile press, who get no advertising fees from doctors; against quacks, who live by false exploitations of advances in medical science, and against new schools of so-called medicine formed to receive those who cannot reach the standard of the regular school and who realize that the great public can be fooled a large part of the time, and that medicine offers a wonderful opportunity to reach the public when its defenses are poor. No other profession and no business of a public service order has anything like the struggle against exploitation, contamination and unfair competition that the medical profession has. If it raises its standard and excludes the unfit, it is called a trust. If it encourages quarantine against contagious disease or insists on vaccination, it is abusing the sacred privilege of a free land. It is small wonder that fewer and fewer men enter the profession, and as a consequence the graduates have fallen off at the rate of a thousand a year for the past fifteen years, so that today not more than half enough doctors to supply the need enter the field each year.

The consequence of this growing shortage of doctors is a greater activity on the part of all the jackal elements on the one hand, and on the other an effort on the part of social reformers to spread out the care of the sick by one means or another, so that everybody shall have a little medicine, rather than that the rich get it all and leave the poor to the patent medicine vender and the quack. It is very plain that some changes must come in the interests of both the profession and the community. Shall the profession stand by and allow itself to be exploited by all sorts of legislation conceived by men and women who mean well, and have seen and known of such legislation working more or less well elsewhere, but who know absolutely nothing of the advancement of medicine, or what medicine needs, and who do nothing whatever to assist medicine to attain these needs?

The poor in times of stress are half-clothed and poorly shod; they may suffer from hunger in the face of plenty of stored-up food, and they may feel the cold when fuel may be bought from profiteers, but has any society for the study of the even distribution of surplus commodities proposed any legislation for the support of the improvident or the redistribution of all surplus assets, including money? No, it is only the medical man whose efforts are to be directed by legislation if he does not protest.

There is a form of protest that would help materially if it could be worked out properly and justly and could receive the support of the profession, and that is in raising the demand for government support of all accessory means of diagnosis and consultation when necessary, and government subsidy of hospital beds in "health centers" in thinly populated districts. The reason for these centers and their scope are outlined.

It is absolutely essential in economizing time in the making of diagnoses that every means of study of cases be made at the earliest moment possible. It must not be felt by the rural population that only in big centers, in university hospitals, or from high-priced specialists can they receive adequate care. Nor should the poor man feel that he or his loved ones must needs die because the expensive resources of modern practice are beyond his purse. It is not the doctor that he is afraid of, but the prohibitive cost of hospital care, private nurses, X-ray and laboratory investigations. His doctor, he has learned, can be reasoned with if insistent on his pay, but the others he must pay for or do without.

Let us see what doing without means to the doctor. A patient with a bone lesion is incapacitated from work, and in consequence his wife and four children have no means of support beyond their savings. The family doctor would like both an X-ray of the bone and a Wassermann test, but he hesitates to ask for these because of the cost, and in consequence he keeps on with the remedies, which he has begun to suspect are of no value. In a large city with a well-equipped free city hospital the man might be sent there, but in that event the patient and the study of the case are lost to the family doctor. The man's pride may prevent his accepting the city charity, and in the meantime the bill for medicine and medical service mounts up to far more than the full cost of original laboratory investigation. A conscientious physician hesitates to put his patients to needless expense of unnecessary studies, and frequently by this fact he assumes a responsibility that is unfair both to him and to the patient. If the case turns out to be other than a simple matter, as it will in a fair percentage of cases, the delay may be paid for by the life of the patient, or a protracted illness with grave complications. The constant surprises uncovered in well-equipped hospitals by routine studies of blood reactions and X-ray studies, make for more careful clinical work and for better controlled surgery. Both are in the interest of the patient and doctor alike, and it has come to be more and more a routine to leave no examination unmade that might throw

light on a case in any way. We try not alone to measure the extent of disease, but the function of the apparently unaffected parts of the body.

The surprising defects uncovered by the draft examinations have worked both to safeguard childhood with better medical supervision and to correct many defects in the interest of preventing the later disturbances of advancing age. Much of this work is bound to come under the natural operation of organized efforts in preventive medicine, and already in some cities every public school has a dental chair, and there is a municipal clinic for nasal and tonsil work, where hundreds of children are dealt with weekly. All of this preventive work and its educational aspect should be done under the Health Center, which should be in every way the Health Educational Center of the community, licensed and endowed by the State.

Let us review briefly what the Federal Government, the state and the municipality are already doing for better health, in order that we may see how much of the work of ideal health centers is now being done in an incoordinated way. First, the Federal Quarantine Act and the Interstate Quarantine Act provide against invasion from outside, and a very strict supervision of outbreaks like yellow fever, plague, etc., when they do invade our country. The Public Health Service is constantly alert to progress in the therapy of acute disease, and its laboratories are contributing regularly to this field. The state has taken over the care of some of the chronic conditions and gradually is extending this care. The insane and feeble-minded have become recognized wards of the state, and gradually the tuberculous are being provided for in state sanatoria or state subsidized county institutions. In Massachusetts, the superintendents of such institutions serve as traveling consultants in chest cases, and have contributed to earlier and better diagnosis of chest diseases. State laboratories in our University will make any sort of examinations of blood, urine or feces for towns too small to supply this service. State health officers are available for the investigation of any unusual epidemics. The state has practically assumed the care of accident cases in industry, and is rapidly extending it to industrial diseases. The counties and larger municipalities are gradually extending medical care and the expert study of medical cases to larger groups, notably school children, and to all cases of contagious disease where the health of the community is acutely at stake. The Federal Government and the municipalities, assisted occasionally by funds from states, have undertaken the program of controlling venereal disease, and disseminating education on this subject. It is obviously a public health measure worthy of the maximum support from the medical profession and a bond between the profession and the state, offering great opportunities of increasing the close working together of these bodies.

Free clinical facilities for the poor are confined largely to the centers of population, and are really inadequate even there. They are made up of out-patient departments of medical schools, where

the largely uninteresting mass is handled, often hastily and badly, for the sake of the few cases interesting for teaching purposes. This is not true of our better schools, but the struggle of schools for support has led to abuses in their social service departments, which are too often concerned with how much the patient has and how much he can pay. The second group of clinics are connected with out-patient departments of hospitals, and they are maintained as feeders for the hospitals. Again, it is not the interest of the patient that is always uppermost in such clinics. The third group of clinics are supported by church organizations or charities or groups of medical men desiring special and increased clinical opportunity not possible for them in existing hospitals or clinics. Most of this sort of work is spasmodically done, and much of it poorly done. All such clinics like life insurance companies and medical schools should be obliged to maintain certain minimum standards.

The need of all clinics could be provided for in health centers, and the need of doctors for clinical experience could be equally and far more justly and evenly divided in the same way. If organized medicine underwrote the medical and surgical work of health centers, every medical man in every community would have his term of serving under able clinicians in any special line he chose in health centers, and he would have the opportunity of keeping himself constantly abreast of the times while rendering his share of public service.

The paid staffs of such centers must, indeed, be experts, *on salary*, and the very popularity of the men who contributed the most to their neighborhood practitioners would be a check on the standard of work done.

New York State has a bill for the establishment of health centers, and the American Medical Association a year ago proposed the study of an ideal bill of this kind to provide for just the purposes outlined in this paper. It is group medicine at its best, and it is the most needed influence in medicine today. An abstract of the New York bill is given:

Purposes: 1. To provide for the residents of rural districts, for industrial workers and all others in need of such service, scientific medical and surgical treatment, hospital and dispensary facilities, and nursing care, at a cost within their means or, if necessary, free.

2. To assist the local medical practitioners by providing:

- (a) Facilities for accurate diagnosis by a co-ordinated group of specially qualified physicians and surgeons, both for hospital patients and for out-patients.
- (b) Consultations and advice as to treatment by medical and surgical experts.
- (c) Clinical, bacteriological and chemical laboratory service and X-ray facilities at moderate cost or free when necessary.

3. To encourage and provide facilities for an annual medical examination to detect physical defects and disease, and to discover conditions favorable to the development of disease, and to indicate methods of correcting the same.

4. To provide or aid in securing adequate school medical inspection and school nursing service. (In co-operation with the Department of Education.)

5. To secure our aid in securing better enforcement of the Public Health Law, and a more effective administration of Public Health activities within the area served.

6. To provide a Public Health nursing service adapted to and adequate for the community served.

7. To aid in securing the dissemination of information in regard to Public Health throughout the area served.

8. To aid in securing adequate compensation for medical and surgical care rendered in hospitals and clinics, in order that efficient service may be everywhere available.

9. To provide laboratories, group diagnosticians, consultants, and hospital facilities in the smaller cities and rural districts, and to counteract the growing tendency of medical practitioners to remove to larger centers, and to attract to and to retain in the practice of medicine in these communities a larger number of qualified practitioners of both sexes.

10. To provide medical libraries including books, pamphlets, periodicals, leaflets, exhibits, moving picture films, and kindred educational facilities, with halls for meetings if needed.

11. To provide hospital and other necessary resources for dealing promptly with epidemics.

12. To reduce illness and disability among the industrial workers of the state by providing prompt and accurate diagnosis and efficient treatment for sick and injured workers and the members of their families.

13. To co-ordinate Public Health activities within the districts.

Health Centers:

Health Centers: A health center may consist of the following parts:

- (a) Hospitals.
- (b) Clinics for out-patients.
- (c) Clinical, Bacteriological and Chemical Laboratories.
- (d) District Health Service.
- (e) Public Health Nursing Service.
- (f) Center for School Medical Inspection.
- (g) Headquarters for all Health, Medical, Nursing, and other Public Welfare Activities.

Board of Supervisors shall have the following powers:

1. Purchase, sell, lease or exchange real property for this purpose.
2. To contract for erection of necessary buildings or alteration, etc.
3. To cause money to be assessed, levied, and collected for lands, buildings, etc., as may be necessary.
4. To accept and hold in trust for county any grants or gifts for said health center.
5. To appoint board of managers of health center.

Board of Managers shall have the following powers and duties:

1. To appoint superintendent of health center.
2. To fix salaries of superintendent and other officers and employees.
3. To manage and control health center (grounds, building, officers, physicians, inmates, etc.).
4. To make rules for care of patients, and for fees.
5. To erect additional buildings and make needed improvements.
6. To employ Public Health nurses for visiting and follow-up of cases.
7. To appoint a medical board.
8. To appoint and employ medical, surgical and laboratory staff of center.

Superintendent, the Executive Officer of All Activities of the Center. Duties:

1. Equip health center hospital and its other parts.

2. Supervise and control internal affairs.
3. Appoint other needed employes except attending M. D.'s.
4. Keep records and accounts.
5. Receive patients from health district (or from without, under special conditions).
6. Determine ability of patient to pay and regulate charge accordingly (unpaid cost of maintenance to be a charge on the district).
7. Keep records of patients' treatment and care.
8. Discharge patients.
9. Collect moneys due the Center and keep records thereof.
10. Give a bond before entering on duties.

(Nothing shall be construed to repeal, alter or amend municipal law in cities in re: hospitals. Existing health centers shall continue to function, and state aid may be given with approval of State Health Commissioner. Sub-centers may be established.)

State Aid:

1. For hospitals, half of cost; not to exceed \$750 per bed, and not to exceed one bed to five hundred population.
2. Seventy-five cents per day per free patient.
3. Grant for each clinic half of cost; not to exceed \$5000 per clinic.
4. Grant for treatments at half cost; not to exceed 20 cents per capita.
5. Grant for laboratories half cost maintenance; not to exceed \$3000 per year for each laboratory, and \$1500 per year toward initial cost.
6. Grant 10 cents per capita per year towards salaries of deputies in districts less than 1500 population. Five cents per capita per year in districts of 1500 to 3500 population (in addition to salaries from treasury).

No state aid in excess of above amounts where districts have more than 50,000 population if more than one center to each 50,000 population. No grant hereinbefore provided for shall be given to institution established at passage of this Act, except clinics for maternity care, children, tuberculosis and venereal disease.

Salaries and expenses of experts paid from maintenance funds.

Work of center inspected and standardized by State Health Department.

Provision for periodical consultations and clinics by specialists.

Center laboratories under supervision by director of State Laboratory Service.

Dr. Billings, in a recent article, refers to the New York law as not giving sufficient consideration to the welfare of the medical profession. I believe that this could be overcome very easily by the underwriting of the clinical work of the health centers by the organized medical profession and the payment of salaries to the men while on duty there. The demand for the diagnostic resources for the health center should never interfere with the doctor's personal relation to his patient whether that patient pays him a fee or not. The crux of the whole situation is absolutely dependent upon the maintenance of the relation between the doctor and the patient.

SUMMARY

The past is to be regarded historically, merely that we may estimate the extent and rate of progress.

In the interests of all concerned, better medicine must be practiced and more prevention.

The medical profession must ally itself with the state against the loose handling of half the job and interference with the handling of the other half.

It is better that the profession guide the state in this matter than that the state exploit the profession. In the one case the state can encourage the high standards of medicine and make available its every resource to the people, and enable even the country practitioner to keep abreast of all progress, while in the other the state farms out the care of its ill-paid citizens to anyone who will compete for the job. Under such a plan there is no incentive to progress among doctors, and one more item in the family budget can be stabilized by reformers, one less incentive to attain a better level is removed, and society brought a bit nearer the machine-made and spiritless existence of the pacifist's dream.

The state and county subsidized health center is not a perfect solution to the problem of ideal medicine, but it will go a long way to bring the best that medicine affords into far more homes than now enjoy it, and lighten materially the burdens on the profession. It will establish in the whole community wholesome influences against the vicious propaganda of the quack and the patent medicine vender, it will take post-graduate teaching to the doctor who cannot leave his community to get it, and in the end it will be a decidedly educational influence for better health, better standards and better support of medicine by the people, with fewer inroads from the pseudo sciences.

NEUROLOGICAL FINDINGS IN ONE THOUSAND GROUP STUDY CASES

By THOMAS G. INMAN, M. D., San Francisco, Cal.

In the practice of medicine a large portion of the medical man's duties consists in the making of the diagnosis. Indeed, there are members of the profession who openly state that this is the most important part of medical practice, and thus there has arisen in recent times specialization along the line of diagnosis and consultants, and diagnosticians have been accepted as justifiable adjuncts to the medical body. As if in answer to the question, "What ails the patient?" there has arisen a great list of names in medical nosology, each of which is supposed to stand for a definite clinical entity, and the art and science of diagnosis are directed upon the search for a combination of symptoms and findings to which one of these names may be given. This system does very well for those diseases which make their presence known by specific symptoms, run characteristic courses, produce definite effects upon the body and cease their activities by one or another of the possible terminations. Of such are the diseases of infectious origin, the specific poisons, certain defects in organ functioning, and the like. But the aid of the physician is frequently sought for the relief of symptoms which cannot by any manner of means be charged to the effect of any single condition. Different organs of the body may be involved, often producing reactions in one case entirely out of proportion to the amount of pathology present; in another, showing abundant pathology without the presence of any symptom pointing directly to the system involved. The chronically sick individual often presents definite dis-

ease in several apparently dissociated parts of the body, and it is often very difficult to give to each its proper measure of blame in the production of symptoms. Viewed from the angle of the physician trained in one special field, the case presents quite a different aspect from that seen by a physician whose training has been along different lines. It is to this fact that Sir James Mackenzie² referred when he stated that, "When a person falls ill nearly every organ of the body may be disturbed and each specialist has no difficulty in detecting symptoms belonging to his particular branch. In consequence of this we find that confusion of diagnoses which results when a patient consults a number of specialists."

It is now nearly six years since Dr. Fayette Watt Birch began the development of a plan having for its object the complete examination of patients and the recording and accumulation of the observed data. A number of men, specializing in the different branches of medicine, allied themselves with him and set to work upon the formation of a scheme whereby patients presenting themselves for examination could be viewed from the angle of the various specialists and the results correlated by consultation *en banc* by the assembled members. Since the services of the members were given gratuitously, all moneys derived from patients being used for the purchase of apparatus and the payment of technical assistants, the method was known as Group Study. This name has been retained, and in its essential features is different from Group Practice, in which the main interest lies in the business part of the organization.

It has been pioneer work, and had the numerous difficulties which beset the thorny path been visible from the first, the attempt would never have been made. But to those who, even in these commercial times, still believe that ideals come before monetary considerations, and that the practice of medicine is a profession and not a business, the ends achieved have warranted the collective effort put forth. It is with the intention of bringing to your notice a few observations gathered from Group Study that this report is made.

The occasional need for this type of medicine has been well expressed recently by Sir Henry Morris¹ as follows: "The development of medical and scientific knowledge brings into use improved material means of investigating and treating disease, which are incompatible with the old exclusively personal relations between doctor and patient."

The time has long since passed when any one mind can know all there is to know of even the practical side of medicine. Information furnished by laboratories alone must now be obtained from widely different sources. No single-handed clinical study is capable of supplying all of the evidence which most diseased conditions present. Of what benefit is it to know that a patient shows a positive Wassermann in his blood when only the most painstaking examination of the whole body, requiring special knowledge in several different branches of medicine, can estimate the amount of structural damage the disease has

caused? There may have been a time when it was necessary to know only that an individual had syphilis in order to outline the treatment of that period, but the physician who, today, hangs his therapeutic armament on such a slender thread not only invites defeat of his aims, but places the future well-being of his patient in jeopardy. The practicing physician who possesses the necessary accomplishments to make a satisfactory and complete survey of such an individual is rare, but the number of members of the profession who are desirous of obtaining the information which such a survey can furnish is on the increase. For these, Group Study opens sources of information hitherto denied them, and places in their hands the necessary prerequisite to efficacious treatment.

There has been a great deal written about Group Medicine in recent years. While opinions vary as to the practicability of this type of medicine, the view is widely taken that Group Medicine does fill an obvious hiatus in the present state of medical practice. That it has any place, other than an academic one, in the handling of the common run of diseases is doubtful, and it will never replace even the moderately well-trained physician in the care of the common, well-defined diseases which daily confront the general practitioner.

But there are border-line and mixed cases, those which present disease in forms not well understood where several body systems or organs are affected with no symptom pointing directly to the organ or part involved, and which for their proper interpretation require minds trained not only in the several branches of medicine, but also experienced in the general features of medical practice.

The patients examined by the St. Luke's Group show quite well, in the multiplicity of their present and past complaints, the type of individuals to which I refer. In the one thousand cases, 683 gave a total of 1756 complaints referable to the nervous system. The incidence of these complaints was as follows: Nervousness, 494; pain, 371; depression, 189; numbness, 181; weakness, 175; paræsthesias, 90; tremor, 87; sleeplessness, 68; dreams, 56, and flushes 45. However, there were only 334 actual neurological diagnoses, and of these 224 were of uncertain organic nature. It would appear, then, that a very large proportion of the complaints referred to the nervous system were the outcome of disease elsewhere in the body.

Of the diseases of the nervous system 110 were of known organic nature. Brain tumor was diagnosed 7 times, caudal tumor 3 times, combined sclerosis 1, cerebral diplegia 3, hemiplegia 1, Parkinson's disease 1, lethargic encephalitis 2, myelitis 2, neuritis 7, peripheral neuritis 4. Syphilis involved the nervous system as C. S. syphilis 69 times, as tabes 4 times, and as paresis 3 times. In the group with a pathological foundation of unknown nature, epilepsy with deterioration was diagnosed 18 times, and epileptoid attacks without demonstrable deterioration, 18 times. There were 40 diagnoses of thoracic neuralgia, 25 of occipital neuralgia, 7 of trigeminal neuralgia, and 1 of obturator neuralgia. There were 65 cases in which a diagnosis of psychoneurosis was made

without the type being definitely stated, 6 of hysteria, 6 of anxiety neurosis, 14 of neurasthenic state, and 3 of psychasthenia. Of the insanities, 4 were diagnosed as toxic psychoses, 3 as manic-depressive, 2 as dementia praecox, and 1 as hypochondriasis.

That pathological conditions elsewhere in the body frequently exert their first noticeable effects upon the nervous system is well known, and we have found this fact to be true in a large proportion of our cases. With only 16 per cent of the cases with nervous symptoms showing definite disease of the nervous system, it seemed that it might be of interest to tabulate the other diagnoses noted in the 683 cases. They are as follows: Mucous colitis, 386; infected teeth, 370; infected tonsils, 295; infected prostate, 133; cholecystitis, 45; infected tubes, 12; infected sinuses, 8; arterio-sclerosis, 196; arthritis, 174; lues, 90; visceroptosis, 151; toxic cardiopathy, 28; nephritis, 25; thyrotoxicosis, 90; hypothyroidism, 14; lack of pelvic support, 25; hemorrhoids, 14; gastric ulcer, 7; duodenal ulcer, 10; lac. cervix, 10; abdominal adhesions, 5; pernicious anemia, 4.

The only generalization that I care to make at this time is concerned with the multiplicity of diagnoses. Individuals are affected differently by disease and react in accordance with certain laws not well understood, or, at least, not easily deducible in current terms. In the presence of a number of known pathological conditions, the duty of the physician would seem to be clear, and that each condition should be cleared up where possible. Sound judgment based upon experience will determine which focus of disease to attack first, since in many instances there is one primary condition which may be responsible for a number of secondary ones.

Group study has brought to our notice some facts of interest in dealing with patients showing marked neurotic tendencies. It has been our rule in the past, in those cases where the special type of neurosis could not be positively determined, to make a diagnosis of psychoneurosis. But since in many of these cases more or less definite somatic pathology could be demonstrated, this diagnosis has been recorded with diminishing frequency in the past year. I have come to feel that an individual should be observed in a state of sound physical health before being classed as a psychoneurotic.

In the sixty-five cases in which psychoneurosis was recorded there were 235 diagnoses of somatic disease or 3.6 per patient. Mucous colitis was present 41 times, infected teeth, 32 times, infected tonsils, 26 times, infected prostate, 7 times, toxic heart, 5 times. Arthritis was diagnosed in 20 cases, thyrotoxicosis in 17, arterio-sclerosis in 15, visceroptosis in 15, tuberculosis in 7, and lues in 2 cases. Various other pathological conditions occurred with less frequency.

In these days when so much misdirected effort is expended in the administration of psycho-therapy, to the exclusion of treatment for definite physical disease, the foregoing tabulation gives one food for thought.

CONCLUSIONS

1. Group study provides the opportunity for the study of disease and its effects in a measure not possible by one physician alone.

2. The method lends itself to the interpretation of disease in a small number of obscure cases.

3. In the presence of a number of pathological conditions in the same patient, due attention must be given to each in estimating the source of the presenting symptoms.

4. No attempt should be made to treat an individual as a psychoneurotic until a complete examination has been made and organic pathology removed.

1. Morris, Sir Henry, *Lancet*, Feb. 1, 1919.

2. Mackenzie, Sir James, *British Medical Journal*, Jan. 29, 1921.

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METABOLISM STUDIES IN PULMONARY TUBERCULOSIS

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This study was carried out in the summer of 1920 at the Trudeau Sanatorium at Saranac Lake, New York, with the aim of finding some rational basis for feeding in pulmonary tuberculosis. In the past this has been largely empirical, and the recent changes of policy from the use of an abundant diet to one of moderate calorie content was prompted by the clinical observation that overfed patients did not do well.

This investigation was carried out along two lines; first, a study of the calorie requirements of patients as measured by their basal metabolism, and second, a study of the creatinin output of patients in various stages of the disease and of nutrition.

The respiratory studies were carried out with the use of the Benedict portable apparatus on fifteen afebrile patients in various stages of the disease from incipient quiescent cases to the active far advanced. About half of the patients were confined to bed at the time the work was carried out, the remainder were ambulant. The experimental data are shown in Table I. The degree of pulmonary involvement is shown in column 3, and is expressed in terms of the Turban classification. The basal metabolic rates are shown in column 9. The basal heat requirements are within the limits found for normal subjects. A few determinations were made with febrile subjects, not recorded here. The effect of the fever on the metabolic rate corresponds to that in other diseases, such as typhoid fever. These results correspond with the findings of McCann and Barr, published since the present work was completed.

None of the patients showed such increase in metabolism as noted by E. Grafe in very severe progressive cases, where there was evidently a toxic breakdown of body tissue, raising the metabolism 20 to 30 per cent above normal in certain afebrile cases.

From this experimental evidence it is apparent that the afebrile tuberculosis patient requires no more calories in his diet than the normal subject. The well person at rest in bed requires no more than twenty to thirty calories per kilo-gram of body weight. Is there any object in giving the

tuberculosis patient more than the minimum requirement? In deciding this question, several things must be considered. First, the activity of the tuberculous process and second, the weight of the patient at the time he comes under treatment. We must bear in mind that the most important single element in the treatment is rest, not only to the organism as a whole, but to the diseased lung itself. If we increase the food intake above the basal requirement, we increase unnecessarily the amount of work of the tissues of the body and also the work of the lungs, since the rate and depth of respirations are both increased to meet the increased oxygen requirements. To test the effect of a large meal on metabolism as compared with a smaller meal of the same kind of food constituents, an experiment was carried out in which one thousand calories were given in one case, and five hundred calories in another. There was an increase of 20 per cent in the minute volume of the lungs after ingestion of the larger meal as compared with the smaller. The significance of such a small increase in respiratory rate as two respirations per minute is only appreciated when we compute that this means an increase of almost three thousand more inspirations in the twenty-four hours, and inspirations of greater depth than on the lower calorie diet. If rest to the diseased lung means anything in treatment, it is worthwhile to avoid this increased respiratory effort without depriving the body of the necessary food for maintenance.

Besides increasing the work of the lungs at the time such an increased diet is taken, we cause an increase indirectly by bringing about a gain in weight, which also increases the minute volume of the lungs. Effort to bring about a gain in body weight should, therefore, be postponed until the diseased process in the lung has become completely arrested.

If then we keep the diet down to the minimum requirement as to basal calories, what is the most favorable ratio of the three chief constituents—proteins, carbohydrates, and fat? Each of these classes of foodstuffs in the normal subject has a specific effect in raising the basic metabolic rate, protein having a much greater action than either fats or carbohydrates. In order to determine whether this action is the same in tuberculosis subjects as in the normal, measurements of the rate of respiratory exchange were made after the ingestion of known quantities of protein in the form of 400 grams of meat. The results are shown in Table II. The increase of 30 per cent corresponds to the rise found in normal subjects. There is an increase of 20 per cent in the minute volume of the lungs, as compared with the basal minute volume.

It is apparent from this experiment that it is of distinct advantage to restrict the protein intake to the minimum necessary to maintain nitrogen equilibrium and make up the calories, which are also restricted during active disease to the minimum, largely of carbohydrates and fat. It has been shown recently by Sherman that this can be done with normal subjects at bed-rest on a diet of .5 grams of protein per kilogram of body weight.

For persons of average weight, say 150 pounds, this is about 30 grams of protein in twenty-four hours. So much for the diet during activity of the tuberculosis process.

When the disease process has become entirely arrested, the principles governing the diet are quite different. It no longer becomes the prime consideration to keep the lungs at the greatest possible rest. It now becomes necessary to consider the diet from the standpoint of enabling the patient to regain any weight which may have been lost during the early febrile period of the disease. During the febrile period of any infectious disease it has been shown that there is a toxic breakdown of protein which high calorie feeding is powerless to check so long as the temperature remains elevated. During the period of convalescence, when the process is no longer active, the feeding can be directed toward replacing the lost weight, and this requires a well-balanced diet containing a liberal quantity of protein at this stage in order to favor nitrogen retention. Ordinarily, the gain in weight obtained in the convalescent tuberculosis patient is largely a gain in adipose tissue, and not a gain in protein. To determine the character of this gain in weight, in the present study, recourse was had to the determination of the creatinin output of a number of arrested, convalescent cases of pulmonary tuberculosis at various stages of their gain in weight.

Let me call attention here to the significance of creatinin in the urine. It was first pointed out by Shaffer that creatinin in the urine, on a creatinin free diet, is purely endogenous and is a product of muscle metabolism. It is not increased as a result of exercise. Its amount in the urine is determined by the muscle mass and not by the body weight per se. Therefore, creatinin amount in the urine may be an index of the functional capacity of muscles, because of its proportionality to the mass of active contractile tissues. The application of creatinin determination in the urine to our problem, therefore, consists in this, that it gives us an index of the functional efficiency of the organism. Body weight gives us a distorted view of this functional efficiency. A convalescing patient may gain considerable weight, consisting almost entirely of fat, and not be building up active protoplasm. By adding fat alone he increases metabolic rate without adding functioning protoplasm.

In the present study creatinin determinations were made on twenty-five patients and on several cases at different stages. The results are expressed in the table in terms of the creatinin coefficient, which is the ratio of creatinin nitrogen to the unit of body weight. As pointed out by Shaffer, a high coefficient corresponds with the presence of a well-preserved musculature; low figures being obtained when muscular development is poor and activity weakened. The creatinin coefficient for normal muscular men is between 8-11, and for women about 6. A glance at the figures here shows a uniformly low creatinin coefficient, indicating a flabby muscular development. Particularly those cases whose weight is relatively high, show a low creatinin coefficient. This shows us

TABLE I

Case Number	Age	Sex	Date	Condition	Body Temp.	Body Wt. Kg.	Height	Optimum Insurance Coefficient	Creatinin Coefficient	Basal Metabolism
5444	27	male	5-20-20	Inactive Par adv. Turban I R.L.	Normal Range	68.8 5'9 5"	164 76.6	9.2	42.2	
5442	28	M	5-20-20	Inactive Minimal Quiescent I-R	"	65 5' 10 1/2"	163 74.19	6.0	36.6	
5399	35	M	5-20-20	Inactive Mod. adv. Turban III R.L.	"	64.8 5' 9.5"	164 78.5	6.3	38.8	
5431	20	M	5-20-20	Inactive Par adv. Turban III R.L.	"	69.1 5 5.2	152 69	7.8	37.9	
5395	35	M	5-20-20	Inactive Par adv. Turban II R.L.	"	62.8 5-5.7"	145 65.2	5.0	39.6	
5454	28	M	5-20-20	Inactive Mod. adv. Turban II R.L.	"	65.5 5'10.6"	167 78.9	8.5	40.3	
5347	21	F.	5-20-20	Inactive Mod. adv. Turban II R.L.	"	62.2 5' 3"	130 59	7.0	38.8	
5415	40	M	5-20-20	Active Mod. adv. Turban I R.L.	"	68.6 5' 8.4"	158 71.8	6.8	39.7	
5369	27	F.	5-20-20	Inactive Mod. adv. Turban I R.L.	"	64. 5' 7.5"	148 67.5	7.6	38.6	
5448	36	M	5-20-20	Inactive Mod. adv. Turban I R.L.	"	76.3 5' 9.5"	164 74.8	7.8	40.1	
5441	28-2		5-20-20	Active Par Adv. II R.L.	"	47 5' 5	82.7	5.0	36.2	
5449	23-2		5-26-20	Inactive Min.I.R.	"	45.1 5' 2	87.7	6.8	40	
5459	23-2		5-28-20	Active Mod. adv. II R.L.	"	50 5' 1.5	56.8	5.6	38.7	
5455	25	M	5-26-20	Active Mod. adv. Turban IR	"	70.1 5' 5	65.5	4.9	38	
5454	28	M	7-3-20	Inactive Minimum Turban I L	"	71 5' 0.6	71.0	6.3	38.4	
5409	19	F	7-3-20	Active Par adv Turban III R.L.	"	54 5' 4	60.5	8.	39	
5448	25	F	7-9-20	Inactive Mod. adv Turban I R.L.	"	59.8 5' 6	65	4.7	38.2	
5417	33	M	8-20-20	Inactive Mod. adv Turban II R.L.	"	75.4 5' 6.5	68.2	5.5	45.2	
5444	24	M	7-20-20	Inactive Par adv. Turban I R.L.	"	67.7 5' 11	76.3	8.2	39.7	
5450	26	M	7-26-20	Inactive Par adv. Turban I R.L.	"	66.8 5' 9	72.7	7.2	36.6	
5452			7-28-20	Active Mod. adv Turban II R.L.	"	74.5 5' 9	73.6	6.7	39.2	
5457	30	M	7-24-20	Inactive Mod. adv Turban I R.L.	"	72.2 5' 6	67.7	4.6	43.4	
5385	28 F		7-24-20	Inactive Min. Turban I R.L.	"	72.2 5' 8	67.7	6.8	40.1	

TABLE II

SPECIFIC DYNAMIC ACTION OF PROTEIN.

Case No.	Date	Basal Met.	After 400 gm. Min. 2-hrs.	Deef Min. 4-hrs.	Min. Vol. 500 cal. 1000 cal.
5415	5-18-20	38.2	45.7m	49m	5.0m 5.7m
5444	5-18-20	38.4	60.1m	48m	8.5m 6.2m
5444	5-18-20	38.4	+30%	+26%	+8% +20%

that these cases have gained in adipose tissue, but are relatively poor in active muscle mass.

In the case of four subjects the creatinin coefficient was studied over a period from early convalescence when they first emerged from bed-rest, through a period of moderate exercise on a low protein diet, and later on on a high protein diet. The results are shown in Table III. At the time of beginning muscular activity, the creatinin coefficient was uniformly low. With the increase in weight the coefficient was practically stationary, or even decreased on a low protein diet, where there was a substantial gain in weight. This is plainly an evidence that this gain in weight was a gain in adipose tissue, and not a gain in muscular tissue. During the short period on a high protein diet and on moderate exercise, there is a very decided rise in creatinin coefficient in every case, showing that there has been a nitrogen retention and a synthesis of new protein or active functioning muscle. We have then, in creatinin estimation, a simple means of determining at any time whether the patient is making substantial gain or only a spurious gain. The creatinin output is index of the functional efficiency of the body.

CONCLUSIONS

In fifteen cases of afebrile pulmonary tuberculosis, eight of which showed active lesions, the metabolism was basal—that is, within a few per cent above to a few per cent below the average normal.

On two patients the effect of giving a meal of 400 grams of lean beef, was determined. The

metabolism was raised 25 to 30 per cent, due to the so-called specific dynamic action of the protein.

The effect of a high calorie diet on the rate and depth of respiration, was determined. A mixed meal of one thousand calories increased the ventilation of the lungs, measured as minute volume, 18 to 20 per cent.

Creatinin determinations were made in fifteen patients, and show uniformly low coefficients as compared with the normal. Creatinin determination over a period of months on convalescent cases show an increase in creatinin coefficient corresponding to an increase in the functional efficiency of the body.

PRACTICAL CONSIDERATIONS REGARDING DIET IN TUBERCULOSIS

The rate and depth of respirations is reduced by rest, and rest is the greatest factor in healing a diseased lung. High calorie diet and a high protein diet have the same effect on rate and volume of respirations as increased muscular work. During the stage of acute activity of the disease, the total protein intake and calories should be reduced to the minimum necessary to maintain nitrogen balance without regard to the weight of the patient. Later, when the acute process has been arrested, the diet should be increased to enable the patient to recover any lost weight up to his optimum weight, and no more. This can be checked by creatinin estimation on the urine to determine that the gain in weight is a gain in active muscle mass, and not a spurious gain in adipose tissue. Again, superfluous fat merely adds to the metabolic rate and respiratory rate without adding to the functional efficiency of the organism.

A confirmation of the advantage of low calorie diet during active disease is found in the work of Janney and Newell, who point out that the course of pulmonary tuberculosis, complicating diabetes, is favorably influenced by the state of undernutrition, resulting from rigid adherence to the proper diabetic diet.

THE DIFFERENTIATION OF EARLY MENINGITIS AND MASTOIDITIS*

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Meningitis is a frequent complication of mastoiditis, but the presence of both meningitis and mastoiditis in the same individual, each having a different etiological factor, is very unusual. In an extensive search of the literature I have failed to find an instance of this kind.

The symptomatology of acute mastoiditis is so well known as not to merit detailed discussion here.

The early symptoms of meningitis likewise need not be discussed.

The symptoms common to both conditions may be only headache, temperature, and disturbance of hearing.

In the differential diagnosis of the two conditions, the symptomatology is of less importance than the physical examination, the Roentgen ray and the laboratory findings. In acute mastoid disease there is practically always local evidence of the disturbance, which may include redness and oedema of the soft tissues over the mastoid, narrowing of the canal near the drum, redness and bulging of the drum, unless it has ruptured or been incised. The Roentgen picture may be negative early in the disease, but later will show cloudiness, which may be due merely to acute inflammatory changes in the lining membrane, of the air-cells. This may go on to pus formation and bone destruction, when the picture will show a more intense cloudiness. The laboratory findings will demonstrate a polymorphonuclear leucocytosis, the count varying with the virulence of the infecting organism and the resistance of the host. The blood culture is negative, unless a sinus thrombosis or a septicæmia is present. The discharge from the ear will usually demonstrate the invading organism, also bone debris if bone destruction is present. In smears of the discharge stained lightly with hematoxylin, the bone debris appears as small, irregular, dark particles which can only be confused with precipitate from the stain. To avoid this, the stain should be filtered each time before using.

In meningitis, resulting from mastoiditis or other focal infection, the primary condition is usually recognized if careful search is made. In uncomplicated meningitis, the Roentgenogram is of no help. The physical findings may include rigidity of the neck, Kernig's sign, unequal pupils and strabismus, photophobia, hyperæsthesia and unequal reflexes. The laboratory findings may demonstrate the presence of a leucocytosis, the cell count depending again upon the causative organism, the virulence of the infection and the resistance of the host. The spinal fluid gives the most accurate information, and may be the only positive finding. In it an increased cell count and the causative organism may be demonstrated. If the organism is not found in smears, it may

grow on culture media or may be found by animal inoculation.

My clinical example is that of a white school boy, fifteen years of age. He was first seen October 21, 1920. The family history was negative. The personal history gave the usual diseases of childhood, also typhoid fever at ten; scarlet fever at twelve, at which time he was very ill for forty-five days; and influenza three times, each attack being very mild. He had a severe cold and sore throat two weeks before, and with it a persistent cough. The onset was accompanied by sore throat, earache and severe frontal headache. The earache had been so severe that it prevented sleep. The mouth temperature was 103° F. At the time of the examination, which was three days after the onset, there was marked tenderness, redness and oedema over the right mastoid, and the ear was displaced forward. The external auditory canal was filled with a thick purulent fluid. There was a central perforation in the drum, it having ruptured spontaneously two hours before. The canal near the drum was narrowed as compared with the left side. There was no evidence of furunculosis. The left ear was entirely negative. The tuning fork lateralized to the right. Both tonsils were reddened and appeared to be slightly swollen. The surface was covered with a follicular exudate. The pillars were deeply injected, especially the right side. Back of the palate a large adenoid mass could be seen, also a great deal of purulent mucus. He was taken to the hospital October 22, and he walked to his room. The urine was normal. Smears and cultures from the ear discharge demonstrated a pure culture of a diphtheroid bacillus. October 23 a complete physical examination was made with negative findings. Under ether anesthesia both tonsils and adenoids were removed and the opening in the drum was enlarged. The cultures from the tonsils and adenoid produced a pure culture of a diphtheroid bacillus. On October 26, the third day after the operation, the temperature was 98.6° F., pulse 74 and respiration 18. Erythrocyte count was 4,040,000; leucocyte, 10,000, with 18 per cent small lymphocytes and 69 per cent polynuclears; hemoglobin was 63 per cent. On October 27 there was some pain in the ear, and the drainage was free. He was somewhat drowsy and the face was flushed. On October 28, the fifth day after the operation, he was brighter and said he felt good. There was no pain in the ear, discharge was much less, the oedema and redness were gone and there was no tenderness. Temperature was 104, pulse 108 and respiration 24. The urine was negative. The leucocyte count was 11,400, with 67 per cent polynuclears. The next day he complained of pain in the lumbar region and vomited at noon after taking broth; also several times during the afternoon without reference to taking of food, the vomitus being a clear fluid. A physical examination revealed negative findings. Blood culture was negative. Temperature was 100.6° F., pulse 80, respiration 24. October 30, he was sleeping most of the time. He complained of pain in the back and severe headache. He was also nauseated and vomited some. The discharge from the ear had ceased. October 31, the temperature was 98.4° F., it having dropped 6.4° in the course of eight hours. Eight hours later it was 104.4°. The drum was healed and almost normal in appearance. The physical examination, urine analysis and blood cultures were negative. A roentgenogram of the mastoid revealed no cloudiness. The Widal was positive, but he had had typhoid fever five (5) years previous. The examination of the blood for malaria was negative. The leucocyte count was 13,800, with 75 per cent polynuclears. On November 2, ten days after the tonsillectomy and four days after the beginning of the nausea and vomiting, he developed definite signs of meningeal

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irritation. He was very lethargic and at times restless. He complained of severe pain in the back of the neck and at the base of the brain. There was twitching of the arms during sleep. Both pupils were slightly dilated, the right more than the left. Reaction to light was very sluggish. The eye grounds presented nothing suggestive. There was some photophobia. The tongue deviated distinctly to the left. The summary of the neurological findings by Dr. N. H. Brush was as follows:

"Semi-stupor with restlessness; hyperaesthesia of the whole body; photophobia; unequal reflexes and positive Brudinski's and Kernig's signs are strongly suggestive of a cerebro-spinal meningitis."

A lumbar puncture was then done. The fluid escaped under increased pressure and was perfectly clear. The cell count was 98. Smears from a centrifuges specimen revealed pneumococci. The next day an exploratory mastoidectomy was done with negative findings throughout. Cultures from the cells produced no organisms. He rapidly grew worse, sank into coma and died November 5, the thirteenth day after the tonsillo-adenectomy, the seventh day after the onset of nausea and vomiting, or the third day after the beginning of meningeal irritation.

The autopsy findings by our pathologist, Dr. Leonard Rothschild, were as follows:

"The brain was covered with a thick, purulent exudate, filling all the sulci from the cortex to the base. The pus and cerebral fluid both revealed large numbers of a gram-positive lancet-shaped diplococci, morphologically pneumococci. The blood sinuses were free from thrombosis, and the ears on either side were clear. The lungs were expanded, and scattered through the lobes were small, diffuse, punctate and conglomerated areas of hemorrhagic exudate. These were sub-pleural and resembled closely the picture of an influenzal hemorrhagic pneumonia. On incision these areas were found to be filled with a bloody, frothy fluid, in which pneumococci were present in large numbers. These were definitely not abscesses or true consolidations. The microscopist showed them to contain a large cellular exudate in which mononuclear cells predominated. Pneumococci were found in the lung tissue. The anatomic diagnosis was a lobular pneumonia acting as a focus, resulting in septicaemia and lepto-meningitis."

An analysis of this report reveals a mastoiditis following a tonsillitis, the causative organism being a diphtheroid bacillus. After tonsillo-adenectomy, the middle ear condition healed completely, as demonstrated by physical examination, Roentgenograms and an exploratory mastoidectomy, at which times cultures from the mastoid cells were sterile. But, during convalescence from the tonsillectomy, the patient developed a lobular pneumonia which terminated fatally in a pneumococcal meningitis. During the course of the illness it was difficult to be certain that the meningitis was not a sequel of the mastoiditis, but the various data, as given above, demonstrated that there was no connection between the two. This was also borne out at autopsy.

During life the pneumonia was not recognized and this made the explanation of the meningitis more difficult. If Roentgenograms of the chest had been made in addition to the physical examination, it is possible that the condition would have been discovered.

The first spinal puncture revealed clear fluid with a cell count of 98 and pneumococci found in the smears and on cultures. Within twenty-four hours the fluid was very turbid and had a

high cell count, which demonstrates how rapidly the condition progresses.

The removal of the patient's tonsils and adenoids during the acute stage of the middle ear suppuration and the bearing of this procedure upon the subsequent pneumonia, remain to be considered. For years it has been generally recognized that disease of the tonsils and adenoids is the most important factor in middle-ear suppuration. The removal of the tonsils and adenoids after the acute infection of the middle ear has subsided has been practiced routinely, either to cure a chronic suppuration or to prevent future acute attacks.

Leland,¹ in 1913, advised adenoidectomy during the acute state of middle-ear infection, in order to obviate lancing the drum. Glogau² goes further and advises the removal of both tonsils and adenoids during the acute illness to prevent the more serious operation of mastoidectomy. He maintains that the earlier this is done the better, and practices it routinely. This procedure I also followed, and the middle-ear infection subsided promptly. That the patient developed pneumonia may be attributed to this procedure, but why might it not just as likely follow a mastoidectomy, which is frequently done? I have removed the tonsils and adenoids in the presence of acute middle-ear suppuration with mastoid symptoms in twelve other instances, and in each the condition subsided rapidly.

CONCLUSIONS

1. That the patient had middle-ear suppuration with mastoiditis caused by a diphtheroid bacillus.
2. That the development of meningitis was not related etiologically to the mastoiditis.
3. That, early in meningitis, the spinal fluid may be clear, yet contain the organism.
4. That the advisability of early tonsillo-adenectomy in the presence of middle-ear suppuration to obviate a mastoidectomy is logical.

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THE RATIONALE OF RADIATION IN THE FEMALE PELVIS.*

By ALBERT SOILAND, M. D., F. A. C. P., Los Angeles

The subject of radiation in pelvic disorders is well diffused throughout medical literature, but so many contrary beliefs are expressed that the writer desires to lay before this society his own impressions, gleaned from personal experience and visits to many clinics.

With the biology of radiation you are no doubt familiar. We will accept the theory that certain ineffectual radiation may act as a stimulus to a cancer cell, and in favorable instances actually promote the growth of such cells, yet, as far as the writer knows, there are no authentic cases on record which prove the truth of this belief. There can be no question that such disasters may occur, but conversely, there is no doubt that radiation

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carried to a high degree not only inhibits but actually destroys both the nucleus and cell body of any sensitized tissue within the radius exposed.

The rationale of radiation in the female pelvis demands a thorough study and correct diagnosis of each case before the treatment is undertaken. When this has been achieved, then deliver sufficient energy of radiation to accomplish what each particular case may require in order to obtain the best end result in the shortest possible time.

The clinical conditions best suited to radiation are uterine hemorrhages of all sorts, particularly the bleeding varieties from endometritis, myomata, fibromata, fibrous type uterus, and angiomas. In these cases radium is practically a specific. It has been urged that radium should not be used to treat some of these conditions occurring in the very young. Experience has now taught us, however, that age limitations may be disregarded. If the bleeding comes from a large fibroid, myoma, a submucous or subperitoneal growth, large enough to be either seen or felt by external palpation, the X-ray will insure a symptomatic cure, and if not a total obliteration, at least a marked reduction of the growth. In certain of these cases much more rapid results are obtained by a judicious intrauterine radium radiation, plus cross-fire with deep Roentgen radiation.

Let us now enter debatable ground and consider border-line and malignant conditions. At the outset I wish to make it clear that in this paper I shall not discuss surgical treatment in any detail. All cases which are favorable operative risks should, of course, be given the benefit of the best surgical skill available. In cases, however, where an operation is not feasible, there is no longer any excuse for withholding radiation, although this is contrary to the teachings of some surgeons. I am willing to assert that cancer of the uterus, advanced to a point where the diagnosis is unmistakable, is practically incurable by any means in our present armamentarium. On the other hand, some of the most distressing symptoms of advanced uterine cancer can be relieved by radiation. Border-line cases should be given radiation and treated as if dealing with a carcinoma.

In carcinoma of the cervix, I believe it is possible to effect a cure in a certain proportion of cases. Our object in dealing with cervical carcinoma should be to destroy every malignant cell with radium as quickly as possible. If this is done before the glandular field has been invaded, there is fair prospect of a cure. My technic for a cervical carcinoma consists of an implantation in the cervical canal of fifty milligrams of radium element, with filter of one-half millimeter of silver, one millimeter of brass, and one millimeter of hard rubber, for fifteen hours, giving four such applications within six days' time. This is a total of three thousand milligram hours, which is sufficient to destroy carcinomatous cells within a radius of three centimeters in all directions from the center of application. This treatment is followed by X-radiation over the lower abdomen, through four ports of entry, giving a total of six hundred milliamperes minutes in a period of six days. In can-

cer of the body of the uterus, the technic is practically the same, except that radium is carried up to the fundus if possible. If this cannot be accomplished, radium is packed in an additional two millimeters of hard rubber filter, the rectal wall protected with two millimeters of lead, and the entire mass inserted into the posterior culdesac. Additional tubes are placed in each fornix, and the exposure carried up to six thousand milligram hours within six days' time. The X-ray cross-fire is directed through six ports of entry, on the abdomen, giving a total of nine hundred milliamperes minutes, with ten millimeters aluminum filter, one-half-inch cotton filter under compression, one hundred kilo volts, five milliamperes tube circuit, at an eight-inch skin distance.

The technic for the various non-malignant hemorrhagic conditions varies with the age of the patient and the severity of the symptoms. A single twelve-hour application of twenty-five milligrams radium element placed in the uterine canal is frequently sufficient to bring on a transient amenorrhea. This exposure is repeated once or twice within six weeks, and in more stubborn cases the dosage is doubled and the time interval between treatments shortened.

The writer recalls one patient, a physician's wife, who, having a large bleeding fibroid, with an unusual nerve syndrome, was exposed to the X-ray six years ago. In three months' time, complete amenorrhea was established with a disappearance of the fibroid. The patient has been in excellent health up to the present time. Two months ago normal menstruation appeared, much to the patient's surprise, and a careful examination failed to disclose any pathology. The patient's husband concurs with me in the opinion that no additional treatment is advisable. This is the longest cessation of menstruation due to radiation within my knowledge.

There are other conditions besides uterine diseases wherein radiation is of tremendous value. In affections such as malnutrition, anemia, or tuberculosis, sterilization, either temporary or permanent, may be desired; and there is surely no better method of obtaining this without shock or danger than by intelligent radiation. Many other conditions, some very intractable to ordinary medication, such as chronic oophoritis, leukorrhea, and pruritus vulvæ, are ordinarily amenable to radiation.

I have treated a goodly number of uterine carcinoma cases in the pre-radium days with X-ray, blindly and empirically. Definite results were not in evidence. An occasional relief from pain, foul-smelling discharge, and other disturbances, or in other words, a sufficient change for the better in some of these poor unfortunates warranted a continuation of the treatment with the hope that some day a solution would be found. Then came radium, and with it a few quickly made experts who permitted their enthusiasm to carry them into making unwarranted and extravagant claims of radium cures. That radium has been a wonderful step forward, and is destined to add its luster to that of radiation from modern X-ray apparatus is self-evident, but it

must be measured in the capacity of actual work accomplished and its true worth thereby established.

With my more or less early disappointing X-ray experiences in other than superficial cancer, I did not at once get excited over radium, but only after employing it over three or four years' time was it apparent to me that radium possessed outstanding merit. It is only a matter of a few late years that radium has been used with anything like a full understanding of its adaptabilities, and it can now be truthfully stated that radium has a selective field of usefulness in uterine carcinoma, singularly unchallenged by any other medical or surgical aspirant. During this period I have subjected a great many cervical cancer patients to radium radiation, not a few of whom have remained free from visible or demonstrable recurrences from periods of one, two, and three years. A far greater number, however, have been miserable failures from a curative standpoint. While no hard and fast time limit for recurrence has been established, our knowledge of the usual rapid invasion of mucous structures would seem to warrant the assumption that if a cervix remains perfectly clean and of normal consistence one year after it has been cleared from cancer by radiation, and with the patient otherwise well and free from internal invasion, that a clinical cure in the case may be expected.

What are we to think of the colossal amount of X-radiation which advanced European clinicians are promulgating, and for which cancer cures as high as 70 per cent are reported? I know of no better word than superradiation by which to placard this revolutionary method of X-ray therapy. The generating apparatus consists of transformers approximately one and one-half times more powerful than those generally employed in America. Such an instrument delivers almost a pure homogeneous gamma radiation of enormous mass and energy. Indeed, if we are to accept some of the claims, advanced radium will soon be far outdistanced by this Utopian X-ray, which will be all and self-sufficient. American engineers are busily engaged in developing even more powerful apparatus, which promises to be more revolutionary and epoch-making. Between theory and fact, however, there is a very wide departure, and I would advise no one to throw away their radium or present X-ray equipment until careful investigation and the test of time have placed their stamp of approval upon superradiation. In the meantime, it must not be forgotten that extreme danger lurks in the path of such work, and that each step must be guarded by every means known to science, in order to safeguard both the patient and operator against this potent force terrible to contemplate.

The question of surgery in uterine cancer is indeed a grave one. When the malignant condition is sufficiently advanced so that a definite diagnosis can be had, a fatal termination is the rule, irrespective of operation or radiation. In the writer's opinion, in clearly surgical cases, thermic cauterization or electrical dessication should have priority over the knife. If one can

be sure that the growth is confined wholly to the uterus, a careful hysterectomy is the proper procedure. In such cases, the surgeon and the radiologist should co-operate. Let us urge whenever possible a routine procedure along these lines. The radiologist makes an intrauterine pre-operative radium application, the surgeon operates from five to seven days later, and the radiologist follows the operation immediately with radium in the vagina and X-ray over the abdomen in the usual post-operative method. In the belief of the writer, such a procedure is the best combination that we have at the present time to combat malignancy in the female pelvis.

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INFANTILE ATROPHY *

SPECIAL REFERENCE TO FEEDING

By JOSEPH ROBINSON, M. D., Anaheim, Pediatrician.
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In presenting this paper to you today I purpose to lay stress on the use and value of malt soup and albumin milk, with modifications, in the feeding of atrophic infants.

We are, I believe, all thoroughly agreed that no artificial form of feeding is comparable with breast milk, which should always be given, if practicable, in these cases of infantile atrophy. Breast milk is not a panacea in all of these cases. Hence it is not surprising that other forms of feeding are sometimes a failure.

My experience with malt soup feedings began some fifteen years ago by using the formula of Liebig, the originator of malt soup. This was used with partial success until three years later the Loefflund's malt soup extract was obtained, and the formula, as perfected by Keller, followed. This formula, as did Liebig's, called for the same proportions of milk, flour and water for all ages, and proved very trying in any of these cases unless a condition of constipation existed.

Other preparations of malt soup extract have been tried, and fully one has given satisfactory results.

After about five years' experience with Keller's fixed formula and the difficulties arising because of vomiting and diarrhoea in many of the patients, the formulas were made elastic by making milk and water dilutions, according to the age of the infant, and using the malt soup and flour, each in quantities of from one-half to two ounces a day. If diarrhoea developed, the amount of the flour was increased and the malt soup decreased. In severe cases it sometimes is advantageous to substitute for the wheat flour, rice, barley or arrow root, or a combination of two or more of these flours.

The value of the malt soup feedings is due to the easily assimilable maltose, of which malt soup extract contains 57.5 per cent, and dextrose, 11.7 per cent, a vegetable proteid of 6.4 per cent, upon the presence of gelatinized starch, which acts as a protection against the undesirable effect of the fat and sugar, and potassium carbonate, which combats the acid intoxication, as evidenced by the disappearance of the ammonia from the urine. It

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also aids in the alkali loss which occurs in this condition.

After a period of six weeks of feeding with malt soup formulas, as with any cooked food, it is essential to administer orange or tomato juice each day. As soon as it is practicable, it is advisable to augment or substitute for a part or a whole of one or more of the malt soup feedings, a vegetable soup or clear broth, later strained vegetables, and still later a return to a simplified milk formula, in order that the vitamins which may play an important role in this disease may be supplied.

In any arrangement of formulas, malt soup feedings will be followed by diarrhoea in a percentage of these cases. The diarrhoea is usually of the fermentative type. In these patients or those suffering from infantile atrophy, albumin milk or one of its modifications is indicated. Albumin milk synonyms—protein, eiweiss, casein, calcium caseinate, larosan milk—have virtually the same composition of protein, 3 per cent; fat, 2.5 per cent; sugar, 1.5 per cent; salts, 0.5 per cent.

The following suggestions in the preparation of albumin milk have been found of value:

Dennett¹ states that:

"When the milk is thoroughly jellied, it is then put upon the stove and is heated to a steaming heat (160° F.), being stirred vigorously. This process is to kill the pepsin or rennet, so that it will not curdle the buttermilk when added to it later."

Julius Hess² states that:

"The completed albumin milk must not be heated above 100° Fahrenheit, otherwise it will clump"; and "In feeding, use a nipple with a large opening."

I have for some time used, for home modification and with marked success, the calcium caseinated milk, after the formula of Stoeltzner, as prepared with larosan powder. Larosan, which has been accepted by the Council of Pharmacy of the American Medical Association, appears in New and Non-Official Remedies, 1919, page 170. Larosan is a calcium caseinate and contains 2.5 per cent calcium oxide, and 97.5 per cent casein. When prepared according to the manufacturers' directions it compares favorably in composition and therapeutic value with other albumin milks.

Albumin milk favors intestinal digestion, combats acid fermentation, and increases the tolerance of the bowel in infantile atrophy.

In some patients albumin milk should be diluted with one-third to one-half boiled water. It should be fed in quantities and at intervals suitable to age, weight and condition of the patient. During the administration of albumin milk there is ordinarily no gain or a very slow gain in weight, until a carbohydrate in the form of sugar is added. When there is no vomiting or diarrhoea, we add sugar.

The form of sugar usually is cane or dextrin-maltose. Some four years ago my attention was called to the value of corn syrup in infant feeding, and until recently I have used it as a sugar content in the feeding of these atrophic infants with very gratifying results. The corn syrup

is introduced in 3 per cent strength and increased up to 12 per cent. A gain in weight occurs when enough corn syrup is added to furnish sufficient calories. It is sometimes possible to bring value of the food up to twenty-five calories per ounce. The important feature of corn syrups is the high percentage of dextrines and glucose combined with the lower percentage of maltose. Value, 110 calories per ounce.

The advantages of corn syrup are the mixed sugars which are split up in the intestines at varying intervals. The results obtained by using corn syrups in infantile atrophy has been so satisfactory that it has been used exclusively in these cases until recently. In some instances the corn syrup is given in a 10 per cent dilution, with water between feedings.

Recently a dextrose or chemically pure glucose obtained from maize has been used in several cases. It is now being used with very satisfactory results in three cases of infantile atrophy at the Johnston-Wickett Clinic in Anaheim. This dextrose is employed in amounts up to three ounces per day without unfavorable results. The examination of the urine and stools, as reported from the clinical laboratory, have been negative for sugar. We have added to our list a sugar which gives promise of being superior to any other in the feeding of infantile atrophy patients.

SUMMARY

1. The use and value of malt soup in infantile atrophy is in cases:
 - (a) In which maternal or wet nurse feedings are impracticable or unsuccessful.
 - (b) In infants over three months of age.
 - (c) In which there is not present diarrhoea.
2. The use and value of albumin milk in infantile atrophy is in cases:
 - (a) In which maternal or malt soup feedings are not applicable.
 - (b) In infants under three months of age.
 - (c) In which there is present diarrhoea.
 - (d) Larosan milk (calcium caseinate milk) has practically the same composition as other albumin milks, and is easy to prepare.
3. Corn syrup, in conjunction with albumin milk, is applicable:
 - (a) When sugar is required.
 - (b) Because it is readily absorbable and less irritating to the gastric and intestinal mucosa, even in high percentages, than other sugars commonly used.
4. Dextrose, chemically pure glucose derived from corn:
 - (a) Apparently requires no expenditure of energy on the part of the digestive system.
 - (b) Non-irritating to gastric intestinal mucosa, readily and completely absorbable, not found in the urine and feces, following administration in high percentage.

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TREATMENT OF SYPHILIS WITH SILVER-SALVARSAN *

By VICTOR G. VECKI, M. D., and MILLARD R. OTTINGER, M. D., San Francisco, California.

This is a preliminary report based upon over two hundred intravenous injections of silver-salvarsan.

Syphilologists are familiar with the history and the chemical composition of the silver-salvarsan. It will, therefore, be sufficient to state the following facts:

Kolle, who succeeded Ehrlich, succeeded also in the production of silver-salvarsan, which has the advantage over neo-salvarsan of being very stable, easily soluble, and considerably less toxic. In a 20 per cent solution it is isotonic. Silver-salvarsan is even less toxic than some sodium preparations that were elaborated after neo-salvarsan.

Colloidal silver by itself has been shown to have more spirochaetecidal influence than mercury.

Though German authorities have published excellent results in the treatment, mainly of neurosyphilis, and while we knew something of the influence of silver upon nerve lesions, we started the use of this new drug silver-salvarsan hesitatingly, very carefully using careful technic. We invariably started with an initial dose of 0.1 gm., and then increased to 0.2 gm., and finally to the maximal dose of 0.3 gm. From eight to twelve injections were given.

The solution is dark-brown, and patients who had salvarsan or neo-salvarsan before were told so beforehand.

We saw no untoward reaction of any kind in any of the patients. One patient who, after each of three injections of neo-salvarsan, showed very pronounced and very disagreeable general and cutaneous reactions, tolerated one small dose of silver-salvarsan very well.

Our results were uniformly good. Early syphilitic manifestations disappeared rapidly. One patient whose Wassermann reaction had remained positive in spite of two years' intensive anti-syphilitic treatment, showed a negative reaction six weeks after twelve injections of silver-salvarsan. Another patient, with a somewhat mysterious and disfiguring facial syphilis, and who was previously treated in every possible way with slow but rather insignificant results, is rapidly improving and being made happy.

Silver-salvarsan injections may be combined with other treatments, without any danger. We use intravenous injections of cyanide of mercury on the days when no silver-salvarsan is given, and give the silver-salvarsan at intervals of from three to five, and even eight days.

We consider silver-salvarsan to be a very valuable addition to the armamentarium against syphilis.

THE EARLY DIAGNOSIS AND THE TREATMENT OF CANCER OF THE CERVIX *

By ROLAND E. SKEEL, M. D., F. A. C. S., Los Angeles

If any apology is needed for a paper on the subject of "Cancer of the Cervix," that apology is

* Read before the annual meeting of the California State Medical Society.

found in the fact that the ultimate mortality rate is very close to 100 per cent, and the additional fact that this disgraceful rate is due in large part to late diagnosis.

The absolute necessity for an early diagnosis, if a cure is to be within the realm of possibility, rests upon anatomical, and the possibility of cure through early operation upon pathological grounds.

Anatomically, even the least perceptible extension of the growth beyond the cervix in any direction means that bladder, rectum or ureters are involved, while if the growth is confined to the cervix without direct extension through tissue involvement, glandular metastases are relatively late or do not occur at all; therefore the prognosis following early diagnosis and removal should compare favorably with the prognosis following early operation for cancer of the breast, in which early tissue involvement by direct extension of cancer cells to organs not amenable to operative treatment is less to be feared than early glandular metastasis.

The reasons an early diagnosis is rarely made are many, and not all of them by any means are attributable to carelessness on the part of the general practitioner, as is too frequently assumed. On the contrary, much of the responsibility for this must be shared by the lay tradition that more or less menstrual disturbance in the form of menorrhagia of metrorrhagia is normal at the menopause, to the familiarity of every woman with the periodical hemorrhage of menstrual life, and to the ancient belief that cancer means pain, foul discharge, and cachexia.

This periodical discharge of blood from the genital tract and the leucorrhea which sometimes follows trifling indiscretion leads the patient to ignore irregular menstrual frequency and leucorrhea as she approaches the menopause, and by reason of the tradition above mentioned she refuses to become excited over a slight increase in the menstrual flow or shortening of the inter-menstrual interval.

One of the most damnable symptomatic triads that ever occupied either the professional or lay mind is that pain, foul discharge, and cachexia, are requisite before a diagnosis can be made or the suspicion aroused that cancer may be present. Whereas, the truth is that pain means positive extension beyond the confines of the cervix, foul discharge that saprophytic infection of dead or dying tissue has occurred, and cachexia that hopeless toxic absorption is taking place.

In tracing back the onset of the two really early symptoms, viz., watery leucorrheal discharge and inter-menstrual spotting, one is surprised to learn how often this onset synchronized with the patient's highest state of nutrition as evidenced by her having at that time reached her maximum weight and sense of well-being. This alone is sufficient to lull the most intelligent woman into a belief that nothing serious can be wrong with her.

For these ideas of the laity, the profession as a whole is at fault insofar as it has failed to educate

that portion of the public which is willing to be educated and will listen to professional advice; as to all others the responsibility is theirs and theirs alone. Bearing only directly upon the subject proper, is it not true that the profession itself would stand upon a higher plane in public estimation today if it bent more of its efforts in the direction of public education upon medical topics, taught its individual patients more of the aims and altruistic motives of the profession, and then resigned its Don Quixotic battles with the windmills of the fakes to the public, since, after all, it is the health and life of the community as a whole that is at stake, not the welfare of doctors in the community?

It is perfectly well realized that public education alone would fall far short of solving the entire problem of early diagnosis of cancer of the cervix, even if that were carried to the extreme of frequent examinations at or about the time of the menopause; first, because it would leave outside the pale those instances of rapidly growing carcinoma which occur in young women, and second, because of the diagnostic difficulties often encountered in early cases unless the examiner is thoroughly impressed with the idea that a sufficiently early diagnosis can be made with the microscope, *and only with the microscope*. I know that this statement will be questioned by some, and it may well be that my diagnostic acumen is not equal to the best, but the opinion is honest and is based upon thirty years of experience, with a by no means enormous but not unreasonably limited clientele. If we look our failures as squarely in the face as our successes and trace our cases to their ultimate outcome I am satisfied there will be little dissent from the opinion that a positive clinical diagnosis of cancer means a cancer death sooner or later, while a diagnosis so early that it must be made by the pathologist gives a high percentage of cures.

The physical signs in the curable stage are thoroughly deceptive. Inspection may reveal nothing wrong with the early cancerous cervix that is not equally apparent in the cervix of any multipara who has sustained a laceration with chronic infection and erosion, or there may be a few pinpoint yellowish spots underneath the mucosa so insignificant in size as to be overlooked. Neither may there be anything on palpation to arouse the suspicion of an examiner accustomed to palpating Nabothian follicles in the cervix of practically every woman who has borne children, that is nothing unless it may be the withdrawal of a blood-stained finger at the close of the examination.

Supposing, however, that, as opportunity offered, the family physician informed every parous woman in his clientele that any menstrual change at the menopause excepting diminution of the flow was abnormal, that profuse menstruation, intermenstrual spotting, or recent leucorrhea demanded investigation to determine its origin, and supposing further that when this investigation was made if the cervix were not absolutely normal or the con-

dition not plainly explained by a mucous polyp a section were removed and submitted to a competent pathologist, would not many cases still in the curable stage be discovered that now are condemned to a slow, painful death by one of the most horrible routes?

If, in addition to this increased activity on the part of the general practitioner, the surgeon *routinely* submitted to the pathologist all specimens from cervixes he felt called upon to repair or amputate for infection, laceration, or hypertrophy, deaths from cancer of the cervix would tend to be confined to those groups who profess to believe that the manifestations of disease are immaterial things which can be corrected through vicarious appeals to an immaterial Almighty who will lend an ear, however; only if these are backed up by so much very material lucre per appeal, and to those who are fond of having their necks twisted and legs pulled simultaneously.

Once more, allow me to diverge from the subject proper to call attention to the fact that the permanent survival of the science and art of medicine depends upon the constant, continuous, day by day demonstration that scientific medicine secures definite, tangible results which pseudo-science does not and can not accomplish.

It will be seen that I am neither advising starting diagnostic methods, nor putting forth any new procedures. On the contrary it is felt that if the well known time-tried methods were used systematically and pushed to the uttermost limits of their usefulness the apparition of the anæmic hopeless cancer case, which every surgeon dreads, would be less frequently observed, and the border line cases which he sees from day to day, in which hope alternates with dread only to give way to despair as time reveals the uselessness of accepted measures would be throttled at their onset, with what mitigation of human suffering and prolongation of life one hardly dares conjecture.

TREATMENT

Again I recognize that we are treading on debatable ground, but one can do no better than record his personal opinion and observed results. Bald statistics are not presented; first, because my own are not available, my case records not having followed me as yet; second, because statistics that do not run into the thousands are almost worthless; and third, because statistics presented without all possible collateral data can be made to prove almost anything an essayist wishes.

First, as to prophylaxis, and in this I wish to make myself perfectly clear. I am emphatically opposed to unnecessary operations on the cervix and uterus. Curettage, other than diagnostic, is a rarity, and repair of cervical laceration in a woman well within the child-bearing age is never performed unless that laceration is the site of an infection which is making her miserable by reason of discharge or broad ligament lymphangitis and cellulitis. Further, I believe that the orgy of therapeutic curettings, trachelorrhaphies, and oophorectomies which swept over the profession with the advent of aseptic surgery, was a dis-

grace, so that I cannot possibly be misunderstood in the assertion of my opinion that the first active step in the prophylaxis of cancer of the cervix is the amputation of every cervix in parous women *beyond the child-bearing age* in which there is an unhealed laceration, marked erosion and hypertrophy; and cancer of the cervix in nulliparæ is negligible.

As stated before, submission of the removed material to the pathologist should be a routine procedure, and in this class are found almost all of my own complete successes following the radical operation, together with a few others in whom some symptom had aroused a suspicion which could not be verified or refuted clinically, but in which the diagnosis was made by the pathologist from specimens removed from the cervix for that purpose. In other words, the successful cases were almost all in the class in which the diagnosis was made accidentally as it were.

Further, so far as I know, all of these are living: per contra—with an occasional startling exception—all of those operated upon by *any method* more than five years ago are dead or have had a recurrence if the operation were based upon a readily made clinical diagnosis.

The radical operation above referred to was, in most instances, a combined vaginal and abdominal operation, the cervix being sterilized at the time of, not before, the operation with the thermocautery, the cervical canal then closed by suturing and the incision through the vaginal mucosa made with the cautery.

The broad ligament removal was made either mediad or lateral to the ureters as the circumstances of the individual case seemed to dictate. Two or three were vaginal hysterectomies, the vaginal incision being made with the cautery and the broad ligaments clamped, not tied, so that the destruction of tissue extended beyond the line of broad ligament sectioning. One case, still well after five years, had only a high amputation with the cautery followed after complete healing by radium treatments. In this case the cautery amputation was not on the heat principle first enunciated by Doyen and so elaborately and well worked out by Percy, but followed the lines of high amputation as advocated by John Byrne many years ago.

If I had the absolute courage of my convictions I should advocate the treatment of all *pathologically* but not *clinically* diagnosable cases of cancer of the cervix by high cautery amputation followed by the use of radium. Not having yet arrived at that stage, and in view of the opinions of operators of much greater experience, I still hesitate to take so radical a step and therefore continue to advocate the radical operation for cases in their very early stage—but I think we are coming to the former nevertheless.

Taking now the other extreme, the cases frankly unsuitable for any type of radical operation, those having profuse foul discharge and bleeding, with definite fixation of the uterus and

deep excavation, or with cauliflower excrescences filling the vaginal vault.

Having run the entire gamut of curette and cautery in the early days, zinc chloride cauterization and acetone later, being misled by exuberant enthusiasm into radical operation as a last resort in a few instances, utilizing the Percy method to the limit in others, and finally turning to radium on the basis of "any port in a storm," I am thankful to have found a legitimate reason to drop all operative procedures and depend upon radium as the sole *palliative* measure which squares with my surgical conscience.

There is more than one reason for this attitude. Primarily, it is because without the pain of operation or discomfort of anæsthesia patients have experienced more relief from this than from any other method. Secondly, because every unsuccessful painful operation is an opprobrium to the profession and a deterrent to the prompt seeking of relief by others.

Coming now to the great class of border line cases, which no hard and fast rule can govern and in which each individual patient must be studied as a unit, not as a member of a class, many factors that deserve consideration must be passed over for lack of time. One that may be discussed, however, is free mobility of the uterus or its fixation as the important feature in deciding for or against a radical operation. If my previous contention is true that any extension beyond the cervix means that the case is probably hopeless so far as radical operation is concerned it follows that fixation is an absolute bar to any radical procedure. However, nearly every authority makes the statement that fixation may be due to inflammatory infiltration and therefore not be a bar to radical removal. Theoretically this may be true, but practically we know that every case has more widespread pelvic involvement once the abdomen is opened than was thought possible when the examination was made.

The age of the patient, the condition of her kidneys, heart and lungs, and above everything, her expressed desire after the condition and prognosis have been fully explained, must be taken into account before deciding whether any operation is justifiable, and if so, which is preferable. One may get away successfully with a pan or vaginal hysterectomy with the cautery in one instance, with the elaborate Percy procedure in another, with high cautery amputation followed by radium in another, or with radium followed by any of these procedures in still another, but the successes are in pitiable contrast to the failures.

Being one of those surgeons who believe that every mutilating operation is a confession rather than a subject for boasting, and that when equally good results follow no operation and no mutilation, it is an evidence of professional progress not to operate, the writer would like to summarize the foregoing with the double object of promoting discussion and standardizing our procedures so far as our present knowledge permits.

1. A pre-clinical, microscopic, diagnosis of

cancer of the cervix is necessary if there is to be a tangible hope of permanent cure from any of the surgical procedures with which we are familiar.

2. Early diagnosis can be attained through the education of the individual patient by her personal physician, by removal of a section for examination from every cervix in the least suspicious, and by the routine pathological examination of specimens from every case in which repair or amputation has been performed.

3. Many cases of cancer of the cervix might be prevented if high amputation were adopted as a routine procedure in every case of lacerated eroded hypertrophied cervix found in women beyond the probable child-bearing age.

4. As a rule, with but few exceptions, radical pan-hysterectomy should be limited to those cases which are discovered before any marked symptoms or positive physical signs are present.

5. In the general interests of humanity and humaneness, all bloody or painful procedures should be abandoned in late cases, and palliation by radium adopted as the routine procedure.

6. In border line cases the condition and outlook should be presented with the utmost frankness and the patient's desires should then have as much weight as any other factor in determining how the case should be managed.

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NOTICE

The December Journal will contain a symposium on Industrial Medicine.

THE VALUE OF BLOOD STUDIES*

By WM. PALMER LUCAS, M. D., San Francisco.

Modern methods of bio-chemistry and physiology have introduced a new conception of the value of blood studies, not only in the understanding of anemias, either primary or secondary, but also in the study of many other diseases. A true value of the function of kidneys can be better appreciated through a study of the blood than by a study of the urine. In the same way some of the newer methods of analyzing the blood throw light on diseased conditions in other organs, such as the liver, and lungs, and in the complicated problems connected with digestion.

Hemoglobin may be present in sufficient volume and yet the oxygen be unable to be carried or given off in sufficient amounts to satisfy the needs of the tissue cells throughout the body. An example of the inability of the red blood cells to give off oxygen, even though the hemoglobin is present in normal amounts, is that produced by simple cold. Another example is the presence of abnormal salt concentration of the plasma. Exactly how these two factors of temperature and salt contents of the plasma affect the affinity of hemoglobin for oxygen is not well known. The amount of oxygen that can be taken up, and the rapidity with which oxygen can be given off, varies with the temperature of the body. This is

an important factor in the temperature regulation during early infancy. All who have watched newborn infants with disturbed temperature regulations have noted the cyanosis which occurs in these infants with a low body temperature.

The fact that hemoglobin is a colloid and the knowledge we have of the interrelation of electrolytes and colloids makes it evident that the salt content of the blood must affect and regulate to a certain extent the transfer of oxygen. It has been shown that potassium salts are capable of causing hemoglobin to absorb oxygen to some degree. Many studies have demonstrated the fact that the loss of water with the resulting concentration of salts affects the oxidation of the tissues. The buffer quality of these salts undoubtedly affects the oxygen transfer from the hemoglobin to the body cells. This is, as we know, intimately connected with another factor, the hydrogen ion concentration of the blood. It is well known that increasing the acidity of the blood lessens its active concentration of oxygen. The importance of studying the relation of hemoglobin to the three factors, temperature, electrolytes and hydrogen ion concentration, is indicated in the study of almost all blood diseases.

The morphological study of blood furnishes very reliable data as to the condition of the blood-forming organs. Normally the blood level is kept up by daily destruction and replacement of cells. Ashby has recently determined, by estimating the disappearance of cells transfused by the differential agglutination test, that the normal life of the red blood cell is approximately thirty days.

Destruction is continually carried on by the following processes:

FIRST. By phagocytosis. The endothelial cells of the spleen, liver and other organs take part in this process.

SECOND. By fragmentation. This is shown by the occurrence of microcytes and poikilocytes. Fragmentation is produced in the circulation and not in the bone marrow. Normally, there are a few such cells always present within the circulation, but under pathological conditions, when young cells are thrown out in large numbers, these young cells cannot stand the functional strain put on them and become easily fragmented. Under pathological conditions, not only fragmenting cells, but also cells with vacuoles may be found. These ultimately become hemoglobin dust and are removed from the circulation to be stored in the spleen. Such hemoglobin dust is found normally in the spleen, but appears in much greater quantity in anemic conditions.

THIRD. Destruction occurs by hemolysis. Under normal conditions this probably plays very little part, as hemolysis is normally an intra-cellular process, but in pathological conditions it may play a big part. Under such conditions hemoglobinuria occurs often accompanied by fever and chills.

FOURTH. Disintegration is also shown by the increased fragility of the red blood cells. This is especially found in certain pathological conditions, such as congenital hemolytic icterus, in which there is pronounced blood destruction.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Regeneration. Processes of regeneration are also continually going on. Normally, the bone marrow only produces enough red blood cells to maintain the daily loss of red blood cells in the normal wear and tear of life. Bone marrow activity is only limited by its functional capacity. This may be hyperstimulated under certain conditions, such as by a diminished oxygen supply as is found in high altitudes, or where there is difficulty in the absorption of oxygen through the lungs, as in congenital cardiac conditions. Bone marrow activity normally is a balanced process between blood destruction and regeneration. Certain tests may be carried out to determine how this balance stands at any given time.

FIRST. Urobilin estimations in the urine and stools can be used to estimate the presence or extent of blood destruction.

SECOND. By means of vital staining such cells, as the Howell-Jolly bodies, Cabot's ring bodies and stippling may be made out. These give some idea of the effort which the bone marrow is making in the production of red blood cells and in its effort to maintain the optimum level.

THIRD. Such an estimate of the effort which the blood-forming organs are making may be estimated by the number of (1) reticulated cells; (2) platelets, and (3) mitochondria, all of which can be determined by special staining methods. Normally, reticulation exists in from $\frac{1}{2}$ to 2 per cent of the red blood cells. With marked bone marrow activity this percentage is increased. In simple anemia it usually does not go higher than 4 or 5 per cent. In hemorrhagic jaundice one finds reticulated cells as high as 15 to 20 per cent, and after hemorrhage this may be even higher, 20 to 30 per cent. The percentage of reticulation is, therefore, of great diagnostic value. As they diminish after hemorrhage this can be considered as a good prognostic indication. The estimation of platelets also gives us an idea of the activity of the bone marrow. Platelets are increased where there is marked activity and decreased where there is a defective regeneration. In diseased conditions, where they have been reduced, their return to normal may be a favorable sign.

Mitochondria. These are small limpid bodies found within the cell protoplasm. They are not found in adult or fully formed red blood cells, but are found in nucleated red blood cells and in immature red blood cells. Their presence and estimation gives us some idea of the number of immature cells in circulation.

It has been shown that oxygen consumption may be proportional to the percentage of reticulated cells. Normally human red cells consume very little oxygen. In anemia the consumption of oxygen by the red blood cells may be marked, and this has been found to depend on the presence of reticulated cells. The demonstration of an increased oxygen absorption by accurate methods may prove a more quantitative index of functional variations in bone-marrow activity than the microscopic evidence taken alone.

In any study on the regeneration of hemoglobin and red blood cells, it is important that the de-

termination of hemoglobin percentage be as accurate as possible. Various estimations with the ordinary methods of testing hemoglobin, as by the Tallquist, have shown that they may give an error of from 5 to 20 per cent. The newer methods of estimating hemoglobin are based on the oxygen capacity of the red blood cells. The most accurate method so far published is that of Palmer for determining hemoglobin percentage by the oxygen capacity of the hemoglobin. Robscheit has modified this somewhat, and determines the hemoglobin in the form of acid hematin. Some such method as that of Palmer or Robscheit should be adopted for all clinical purposes for the determination of hemoglobin, as accurate estimates are much to be desired in the study of blood regeneration and destruction.

The study of hemoglobin pigment metabolism is also important. The liver has not only an eliminative function in forming bile pigment from the freed hemoglobin of broken-down red blood cells but, as shown by Whipple, it also has a constructive function. The liver can construct bile pigment probably from its endothelial cell activity, and under certain conditions there may be extra hepatic bile pigment production. The liver has some constructive function in hemoglobin regeneration, and this can be definitely modified by diet. It has been shown that the liver can construct hemoglobin out of other material than broken-down red blood cells. Elements of protein catabolism and certain factors in the diet contribute to the steady construction of hemoglobin. Further, the liver cell activity has not only to do with hemoglobin or blood pigment metabolism, but upon the functional activity and integrity of the liver cells depends also the level of the plasma and serum proteins. Liver function in this respect is influenced not only by tissue catabolism but by diet. A diet rich in meats, liver and certain vegetables will markedly stimulate hemoglobin production, whereas a high carbohydrate diet will diminish it.

As has been stated, the rate of hemoglobin destruction may be estimated by the amount of urobilin in the stools and urine. In the urine it may be increased when there is no marked destruction of hemoglobin or of red blood cells, but may indicate a poorly functioning liver where the urobilin is not removed from the blood and appears in the urine. This may be tested by some of the newer methods of estimating urobilin in the blood serum and gives an estimation of liver function. In the diagnosis of various types of liver disturbance before urobilin either appears in the urine or there is icterus, it must be present for some time in the blood serum in amounts that are often below the level of kidney excretion or icterus. For the reason that urobilin may occur in the urine in conditions other than those associated with excessive blood destruction, stool and urine and blood serum determinations of urobilin must be made. The hepatic origin of urobilin under certain conditions must be borne in mind. In any case the figures for urobilin in

urine and stool should be compared with a normal standard.

Lately another method for estimating blood destruction has been suggested by the injection of sterile hemoglobin solution. The tolerance or lack of tolerance is shown by the appearance of hemoglobinuria in cases of blood destruction. The test may be of quantitative value as the amount of hemoglobin needed to induce hemoglobinuria is directly proportional to the degree of blood destruction, and the tolerance of hemoglobin may be shown to be low in conditions which are usually accompanied by elimination of urobilin.

Coagulation: This may be defined as the colloidal change, which occurs under the influence of calcium electrolytes during which the blood is transformed from the fluid state into the solidified state, which we recognize as coagulated blood. The changes which take place during this process are now more clearly understood, because the various factors which enter into them have been made capable of separate analysis. Coagulation of normal blood may be divided into three stages. Of the first stage very little is known, except that certain definite changes take place within a very short period of time. The second stage, which is the formation of thrombin, depends on the reaction between two substances, cytozyme and serozyme, the one obtained from the cellular elements, and the other from the plasma acting in the presence of calcium salts to form thrombin, which in turn, during the third stage, combines with fibrinogen to form the fibrin clot. It has been clearly demonstrated that the factor, fibrinogen, is disturbed in conditions primarily affecting the liver. Calcium itself is rarely affected except in those cases in which there is a sufficient quantity of bile salts in circulation to combine with the calcium salts, and thus render them unavailable for combination with the serozyme or cytozyme.

The factor concerning which we know the most is that derived from the cells, particularly the platelets. There are two main conditions in which there is marked disturbance of this factor. In purpura hemorrhagica there is a deficiency in the number of platelets. When the platelet count falls below 100,000 we are in danger zone; when it falls below 20,000 hemorrhage from lack of platelets will occur. In hemophilia and in the ordinary case of hemorrhage of the new-born, there is a qualitative change in the platelets or their product prothrombin. The total number of platelets may not be diminished, but qualitatively they are so changed that hemorrhage may occur at any time. In hemorrhage of the new-born this is a temporary condition and usually passes away within a very short time. We have been able to show from experimental work on the blood of the new-born that there is, during the first few days of life, a definite qualitative defect or perhaps better a lack of equilibrium in the prothrombin element. In hemophilia the condition is hereditary and constantly present whether there is bleeding or not. There are certain other types of hemorrhage of the new-born, such as that which

occurs during acute septic infection in which the antithrombin, which Howell has demonstrated, is the main factor at fault and certain other cases of liver injury, as demonstrated by Whipple, in which the fibrinogen is at fault, but the usual case of hemorrhage of the new-born, and certainly those which respond to blood transfusion, are those in which the prothrombin element is affected.

The fact that the life of the blood platelets is approximately only four days explains the reason why the value of transfusion in hemophilic conditions is so short-lived. As soon as the transfused platelets disappear the primary condition returns. Some permanent effect on the prothrombin element has been obtained by feeding kephalin or thrombinlastic substance to hemophiliacs. This line of treatment, we feel, offers the best permanent results in true hemophilic conditions, whereas direct transfusion in the temporary disturbance of prothrombin in the new-born successfully cures this condition, as the prothrombin factor reaches its normal level probably toward the end of the first week. This explains very clearly the success which transfusions have given in these cases of hemorrhages of the new-born. It is important to determine the coagulation time by proper methods. The ordinary method of determining coagulation time by obtaining the blood from puncture wounds is open to grave objections. Unless the blood is derived directly from a vein, tissue juices are mixed with the blood, which so affects the coagulation time that a true picture is not obtained. Normal coagulation time of blood taken from a vein averages from 6 to 12 minutes, anything over 20 minutes means definitely delayed coagulation. In estimating hemorrhagic conditions, coagulation time, bleeding time and platelet counts, with a study of retractility of the clot, fibrinolysis and recalcifying time of oxalated blood gives us sufficient data on which to make an accurate diagnosis of what factor is presumably at fault in any given case.

At the present time there is a great deal of work being done by studying the blood by chemical methods. The impetus to this work rests on the introduction, by Folin, of the micro-chemical methods of studying small samples of blood, and almost every week new methods of study are being brought out. I shall not attempt to describe any of the various methods, but some of the results of these studies and their application to a better understanding of disease should be considered if we are to understand the blood as a tissue which is capable of bearing intensive investigation and which lead materially to a better comprehension of normal and diseased conditions.

It is of interest to note that in certain nutritional conditions the blood proteins vary materially. Normally, the blood proteins vary from 7 to 8 per cent in the adult. This level during the first year is from 6 to 6.5 per cent. In cases of malnutrition it may be reduced to 4 or 5 per cent or even lower. The same may be true of the blood proteins of premature infants. And in diarrheal conditions during infancy the blood proteins may rise to 8 or 9 per cent. Whipple, in

his studies on blood serum protein regeneration, has found that where the serum protein is depleted to 1 per cent, this appears to be the absolute minimum below which the body cells cannot survive. When 2 per cent is reached, this is found to be a dangerous level of depletion. These experimental findings of Whipple agree very closely with those of Uthman in athreptic or malnutrition infants. It is important, therefore, in these cases of malnutrition to estimate the amount of blood protein present. It has been pointed out that there is a marked similarity between the parenchymatous regeneration and the blood serum protein regeneration. Whipple suggests that it may very well be that the protein for the parenchyma cells or the protein for the blood plasma may require similar construction periods and building material, and it may be that the blood protein construction depends on the activity of the cell protein. This regeneration period in chloroform poisoning, where the liver is injured, takes from seven to ten days. These studies are very suggestive and throw light both on the prognosis of nutritional conditions and also on the progress of the condition if the proteins can be followed for their regeneration or lack of regeneration. In some of the nutritional conditions, in which the blood proteins are reduced to the danger limit, repeated transfusions of comparatively small amounts of blood will often assist in tiding over very critical nutritional periods by raising artificially the blood protein level, and will thus give an opportunity for the body cell metabolism to functionate from a better metabolic basis.

The importance of studying blood sugar has been clearly demonstrated in the study of diabetes. It is a well-recognized fact that the excretion of sugar by the kidneys is a sort of safety-valve factor. The real condition which needs careful attention is the hyperglycemia. The importance of this is shown in that as diabetes advances, glycosuria becomes less and less a safe criterion of the condition of the disease, since the permeability of the kidneys for sugar is greatly lowered, especially as nephritic symptoms appear, and blood sugar is a far better criterion of how the condition is progressing.

Of further importance in the study of diabetes, from a prognostic as well as from a therapeutic standpoint, is the hydrogen ion concentration of the blood. This is especially true as an index of present or approaching acidosis, for the blood sugar and alkali reserve in the body are important as determining factors and as indicating how the disease is progressing.

Since the introduction of simple methods for estimating the carbon dioxide combining power of the blood, much light has been thrown on the phenomena of acid intoxication. Acidosis may result either from the overproduction of acid bodies or by their decreased elimination. The normally slight alkaline reaction of the blood is maintained by the influence of the bicarbonate, chlorides, phosphates and proteins of the blood. The carbonates may be considered as a first line of defense. During acidosis other acids combine with the car-

bonates and lower the body's alkaline reserve. Under normal conditions the kidneys are able to secrete an acid urine from a nearly neutral blood through the medium of acid phosphates, which may be considered as the second line of defense, and it is this line of defense, the acid phosphates, which breaks down in the acidosis of nephritis with an increase of the non-volatile acids and a diminished available supply of alkali. Testing the amount of acetone and diacetic acid in the urine does not give very much indication as to the severity of an acidosis. The estimation of the carbon dioxide combining power of the blood gives this information much more accurately. This is especially true in following the treatment of diabetes by the Allen method. In severe nephritis, the retention of nitrogen and acetone often accompany each other, and this type of acidosis is more easily corrected by alkaline treatment than the acidosis of diabetes, in which fasting will often check the acetone body formation and so affect the acidosis much more readily than by giving alkali.

It has been shown that the respiratory center is controlled by the reaction of the tissue fluids in the respiratory center. This is dependent on the CO_2 tension, and this tension in the tissues must exceed that of the arterial blood and must be higher than in the venous blood. In anemia the carbon dioxide carried from the tissues, for each change in tissue tension is less than normal, as has been pointed out by Peters, and unless the blood flow is increased this will result in an accumulation of the carbon dioxide within the tissues. With each increase in the carbon dioxide tension the hydrogen ion concentration rises relatively rapidly. In severe anemia there is a tendency to accumulation of carbon dioxide in the tissues, a diminished ability of the blood to lose carbon dioxide in the lungs and relatively rapid change in the hydrogen ion concentration with any change in the CO_2 tension. All these factors tend to excite the respiratory center and produce dyspnea. This is, in particular, caused by the low hemoglobin and, therefore, changes in the CO_2 tension produce great changes in the hydrogen ion concentration.

In any case in which the acid base equilibrium of the blood is disturbed the resulting acidosis may be compensated or decompensated, as has been pointed out by Means and his co-workers, and it is important to determine which of these two states exist. This is valuable not only from a prognostic standpoint, but also from the standpoint of treatment, for in a compensated acidosis, though the alkali of the blood may be diminished on account of an increase in the non-volatile acids, the blood may have a normal reaction and the acidosis be compensated. In such a case alkali therapy may not be indicated, and at times it may do more harm than good. In decompensated acidosis, alkali is necessary to change the reaction of the blood. In such cases, however, the equilibrium may be pushed too far to the alkali side and alkalosis occur unless care is taken. We may have either a condition of acidosis compensated or

acidosis decompensated, or the opposite may occur of a compensated or decompensated alkalosis. Furthermore, Means has pointed out that in certain conditions, such as pneumonia, the buffer of the blood may be normal, but the reaction more acid than normal due to carbonic acidosis. In such a case the condition is probably due to the fact that the pulmonary ventilation is insufficient to preserve the normal ratio between the soluble carbon dioxide and the bicarbonates and the blood is not getting enough carbon dioxide out. It is important, therefore, not only to estimate the reaction of the blood, but also to estimate the available alkali, and it is the estimation of these factors that establishes whether there is a compensated or decompensated acid base equilibrium.

The acidosis found associated with severe diarrhea in infancy is not due to the presence of acetone bodies, but rather to the deficient excretion of acid phosphates by the kidneys. In such cases administration of soda bi-carbonate will often correct the characteristic symptoms and give normal blood tests for alkali reserve. Notwithstanding this the child may die. Undoubtedly, in such cases the metabolism of the cells themselves has been disturbed, and simply correcting the blood alkalinity is not sufficient to restore the cellular equilibrium. The importance of these blood studies is, that by repeated blood tests we are able to arrive at a more accurate knowledge of the internal metabolism early enough to correct it, whereas if we wait until definite symptoms appear, even the most approved treatment will not check the process sufficiently to save the patient.

In nephritis the study of the non-protein nitrogen in the blood becomes important and gives a better indication of kidney function than almost any other of our functional tests both from the prognostic and therapeutic standpoint. This is perhaps more correct for chronic nephritis than for acute nephritis.

In acute conditions elimination of salts is, as we have learned, probably more important. The retention of chlorides resulting from conditions of lowered permeability of the kidneys and the retention of phosphates in the blood have a great deal to do with the production of acidosis. Where the phosphates are greatly increased, the calcium content is greatly decreased and acidosis may result. In parenchymatous nephritis the retention of salts is greater than that of the non-protein nitrogen elements. The non-protein nitrogen composition of the blood, although it constitutes only one per cent of the total nitrogen of the blood, is more important because the non-protein nitrogen factors show both the anabolic and catabolic processes more than the protein nitrogen or, at least, they give us a better insight into what is going on, and variations from the normal in the non-protein elements often aid us in appreciating what is really happening.

It has been shown by many studies that the various constituents of non-protein nitrogen have different origins. Urea is largely exogenous, while uric acid is partly endogenous and partly exogenous

under normal conditions of diet and health, and creatinin is almost entirely endogenous. Urea is produced mainly by the liver as a result of the de-aminization produced during digestion, which is not used immediately by the blood. Uric acid, on the other hand, is the result of enzymatic transformation of the amino- and oxy-purin. Creatinin is supposed to be formed in the muscles from creatin.

The distribution of these non-protein nitrogen constituents differs greatly in the blood and urine. The percentage of uric acid in normal blood is greater than in urine, while the urea is much lower. In the case of creatinin and ammonia it is very much lower. The kidneys remove creatinin and ammonia with great ease, whereas it is not so easy to remove uric acid. This explains why in any altered function of the kidneys the blood first shows a retention of uric acid, then urea, and lastly creatinin.

In diseased conditions of the kidneys the normal level of urea and non-protein nitrogen in the blood is usually first affected. The relationship between urea in the blood and the output in the urine should always be carried on together, especially in the study of kidney function. The important thing is the ratio between the urea content of the urine and the blood. One may have a high blood urea level with a high urinary output and still have a fairly good functioning kidney. Whereas, if the blood urea is high while the urinary output is low it shows a very much more marked defect in kidney function. Addis has devised a urea function test that aims at an estimation of the functional capacity of the kidneys when put under strain by feeding urea. This, after all, is the most important evidence needed both from the standpoint of prognosis and treatment. Urea retention occurs under a great many different conditions besides nephritis as in cardiac conditions, in syphilis, in lead poisoning, and in many of the anemias.

The blood volume, as well as the concentration of the blood, plays an important role in the pathological physiology of the blood. In pathological conditions the changes from the normal blood volume are quite striking. For example, the blood volume following severe diarrhea is markedly decreased, and in these cases the hematocrit readings show a very marked relative increase in the red blood cells and a diminution in the plasma volume. In chronic intestinal and nutritional conditions such as athrepsia or malnutrition, the blood volume in these cases is relatively increased, whereas the red cell volume is decreased. It is, therefore, important in interpreting the number of red cells to consider the change in blood volume and water content of the body. The water content of the body in children is especially affected by two factors, age and feeding. We have shown a definite curve in the blood volume in new-born infants and in infants during the first year of life.

The effect of food on the water content and, therefore, the concentration of the blood has been shown to have a definite relationship to the amount

of carbohydrate food given. With high carbohydrate food there is definite retention of water in the tissues. It has been shown that glycogen, when it is stored in the body, takes with it three times its weight in water, so that children on a high carbohydrate diet would tend to have a diminished blood volume. In nutritional conditions with marked anemia, the rate of circulation in the venous and capillary blood is important. It has been shown that there is a marked increase in the red cells and hemoglobin content in the capillaries in cases of marked malnutrition, and that this is due to the peripheral constriction of the blood vessels, which is not found in normal infants nor in those suffering from other conditions except in acute diarrhea. In both diarrhea and athrepsia or malnutrition the blood flow is markedly decreased. In anemias, even where the total blood volume is not markedly lowered, there is a change in the comparative percentage of plasma and cells, as there is a relative increase in the plasma and a diminution in the red blood cell percentage. In both chronic nutritional conditions and anemias the plasma volume may be as high as 80 per cent of the total hematocrit readings. Boch has pointed out, however, that plasma tends to be constant, so that the variation in these pathological conditions is one mainly of the red blood cells.

Where the reduction of the blood volume is as low as 20 per cent, as has been shown by Robertson and Boch, there is definite indication for transfusion because a lower limit is incompatible with life. These studies in blood volume have shown the importance of transfusion when the blood volume is so markedly reduced. In cases of acute diarrhea, vomiting, starvation, athrepsia or malnutrition, as soon as food or fluid is given, the blood volume will be rapidly restored as well as the blood flow increased. The importance of the water quotient has thus been definitely determined by a careful study of these blood factors, and these studies have undoubtedly had more effect on lowering the mortality of these nutritional conditions in infants than any other studies that have been carried on during the last few years.

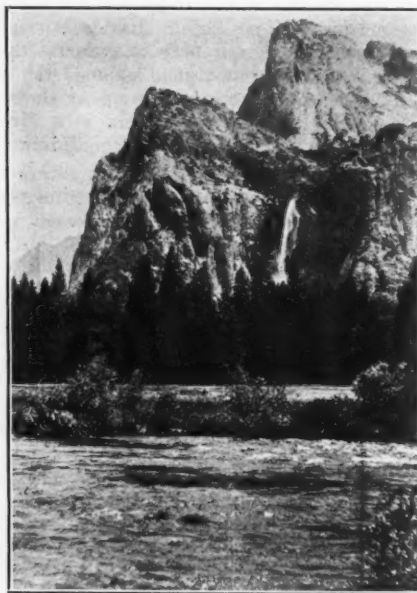
In this rather cursory discussion of some of the modern lines of investigation of the blood I have simply tried to indicate the various lines along which these problems can be attacked, and have pointed out some of the achievements which have resulted from these studies. We can confidently expect that our knowledge of these problems will be much clarified by the continuation of these investigations.

The Yosemite Meeting **SUGGESTIONS FROM THE PUBLICITY** **COMMITTEE**

How do we get there and where do we stay after we arrive?

Those are the two big questions in connection with any convention, not excepting those held in such a well-known place as Yosemite. Both will be answered here as briefly and as comprehensively as possible for the benefit of those who will attend the annual meeting of the Medical Society of the State of California, May 15-18, 1922.

Yosemite National Park—most popular of all the Nation's parks—lies almost due east of San Francisco in the heart of the Sierra Nevada Mountains and is reached by railroad and by several good automobile roads. Main lines of both Southern Pacific and Santa Fe, in the San Joaquin Valley between San Francisco and Los Angeles, pass through Merced, from where the Yosemite Valley Railroad leads up the beautiful canyon of the Merced River to El Portal, at the Park



THREE GRACES AND BRIDALVEIL FALLS AS SEEN FROM BANK OF MERCED RIVER IN YOSEMITE VALLEY EN ROUTE EL PORTAL TO YOSEMITE.

boundary. A Government highway that is like a boulevard extends from El Portal fifteen miles farther up the canyon to Yosemite Valley, the heart of the park. The drive from El Portal to Yosemite, as the village is known, is a matter of an hour, in the comfortable motor cars of the Yosemite Transportation system, one of the most spectacular hours in a lifetime, for the broad road leads through a panorama of cliffs and forests and waterfalls that has no superior anywhere in the world.

On this ride, the visitor passes through the famous "Gates of Yosemite," where El Capitan towers 3604 feet on the left, with Three Graces making a perfect background for Bridal Veil Falls on the right and Clouds' Rest and Half Dome loom up in the middle distance.

The rail journey from Merced to El Portal is only 78 miles, a trip of about four hours through famous placer mining country still scarred by the activities of '49. Detailed schedules and fares from all principal points in the State will be furnished later.

The Wawona road, 90 miles from Merced to Yosemite, paved or macadamized for 38 miles of that distance, probably will be the best road for the use of those who will go to the convention in their own machine, as the Big Oak Flat road sometimes does not open until later because of snow on the higher altitudes. However, road conditions depend on the season, and the weekly bulletin of the Superintendent of Yosemite National Park, distributed to all agencies of the California State Automobile Association and the

Automobile Club of Southern California, might well be consulted before starting the trip to ascertain just what roads are open.

A free road map, showing all routes and distances to Yosemite and also giving the automobile regulations of the park and other valuable information, may be had by addressing a postal card to the Yosemite National Park Co., 637 Pacific Building, San Francisco.

Arriving in Yosemite Valley, Sentinel Hotel and Yosemite Lodge will receive the visitors. The Sentinel is situated in the village, while the Lodge is across the river, less than one-half mile distant, in a grove of pines at the foot of Yosemite Falls. Both offer accommodations and service of the highest type, the Sentinel having its living quarters in rooms, with and without private bath, in a main and annexed buildings and the Lodge having the cabin plan of accommodations, individual houses, with and without private bath, grouped around an attractive community center.

Unobtrusive service and supremely good food have made the Sentinel favorably known to even the most jaded of globe trotters. It is one of the few hotels in the world electrically equipped throughout, all heating, lighting and cooking being done by hydro-electric power. It also is one of those rare hostleries which are operated on an "unlimited" policy in the kitchen, the chefs being unrestricted in their use of good things, so that the Sentinel justly claims the highest per capita consumption of cream, butter and eggs of any hotel on the Pacific Coast.

Rates at the Sentinel (American plan) are \$6 and \$7 a day per person in rooms without private bath, and \$9 a day per person in rooms with private bath. All rooms are outside rooms and nearly all rooms are equipped with twin beds.

The cabin type of resort, frequently encountered in the West, has reached its highest development in the American plan accommodations of Yosemite Lodge.

Redwood cabins with private baths, many of the cabins also having screened sleeping porches, may be had for \$7.50 per person per day, American plan. A generous porch gives entrance to a bedroom equipped with twin beds and other furniture of attractive design, and heated by 5000 Watt electric heaters. A dressing room or large closet provides ample space for hanging clothes. The bathrooms are equipped in spotless porcelain.

Redwood cabins without private bath make up the second group and are furnished similarly to those having baths, except that bowls and pitchers take the place of running water, and small stoves burning fragrant pine or cedar wood are used for heating. The American plan rate is \$5.50 per person per day.

Canvas cabins form the third group—and do not confuse the Lodge's canvas cabins with tents. Canvas cabins here are all that the name implies, houses with canvas for walls. They are floored, of course, and electrically lighted. Entrance is by a screen door and there are six screened windows with curtains and awnings. Furnishings are similar to those in redwood cabins without bath, and the charge is the same, \$5.50 per person per day, American plan.

Maid service in all classes of cabins assures plenty of clean towels and, in the cabins without baths, fresh water. Hot water for the morning toilet may be had without extra charge by those living in cabins without baths, if they will leave cabin number and hour desired with the Lodge office. Detached baths and sanitary, flush toilets are located conveniently.

Reading room, writing room, dining room, broad verandas, soda fountain and curio and news shops are included in the main building of Yosemite Lodge, with outdoor dancing pavilion and

theatre for evening entertainments just in front. Individual service at table is a feature of the Lodge's American plan dining room, where excellent food is appetizingly served.

Both the Sentinel and the Lodge are near the Village, the Government Pavilion, and other places where clinics and sections will meet, but for the benefit of those who do not wish to walk, a local service automobile will be operated over the floor of the Valley, following a regular route just like a street car, the fare being reduced to ten cents for the benefit of the Medical Society.

Inquiries regarding transportation to Yosemite, trips inside the park to Hetch Hetchy, the Big Trees and Glacier Point, and hotel accommodations, should be addressed to H. H. Hunkins, Traffic Manager, Yosemite National Park Co., 637 Pacific Building, San Francisco, who is acting as chairman of the Transportation and Hotel Committee for the convention.

One of the popular resorts in Yosemite Valley is Camp Curry, situated about one mile east of the village. All accommodations are on the American Plan, with accommodations in wooden bungalows with private bath for \$6 per person per day, electric stoves 50 cents per day extra, and in tents for \$4 per person per day. The resort is situated in a beautiful pine grove, with attractive central buildings and nightly camp fire and entertainment.

GENERAL SESSION AND SECTION OFFICERS FOR THE 1922 MEETING OF THE STATE SOCIETY

The list of the officers of the general sessions and the various sections of the State Society is published below, so that members desiring to contribute papers may have the names and addresses of the proper officers of the section in which they are interested. Members desiring to present papers should communicate without delay with the chairman and secretary of the appropriate section, because the program is getting well under way and will be closed and go to press the first week in February.

The Secretary of the State Society, as chairman of the General Program Committee, invites correspondence and suggestions regarding any phase of the 1922 program.

GENERAL SESSIONS

Chairman, Dr. John H. Graves, President of the Society, 977 Valencia Street, San Francisco.

Secretary, Dr. W. E. Musgrave, Chairman of the Program Committee, 912 Butler Building, San Francisco.

SECTION ON TECHNICAL SPECIALTIES

Chairman, Dr. Ray Lyman Wilbur, President Stanford University.

Secretary, Dr. Charles T. Sturgeon, Merritt Building, Los Angeles.

SECTION ON MEDICAL ECONOMICS, EDUCATION AND PUBLIC HEALTH

(League for the Conservation of Public Health)

Chairman, Dr. Dudley Smith (President League for the Conservation of Public Health), Thomson Building, Oakland.

Secretary, Dr. W. T. McArthur (Secretary League for the Conservation of Public Health), Security Building, Los Angeles.

SECTION ON INDUSTRIAL MEDICINE AND SURGERY

Chairman, Dr. E. W. Cleary, 177 Post Street, San Francisco.

Secretary, Dr. Packard Thurber, 906 Black Building, Los Angeles.

SECTION ON RADIOLOGY

(Roentgenology and Radium Therapy)

Chairman, Dr. Albert Solland, 527 West Seventh Street, Los Angeles.

Secretary, Dr. H. E. Ruggles, Butler Building, San Francisco.

SECTION ON PATHOLOGY AND BACTERIOLOGY

Chairman, Dr. William Ophuls, Stanford University Medical School, San Francisco.

Secretary, Dr. Roy W. Hammack, Brockman Building, Los Angeles.

SECTION ON GENERAL MEDICINE

Chairman, Dr. Joseph M. Kling, Brockman Building, Los Angeles.

Secretary, Dr. E. S. Kilgore, 391 Sutter Street, San Francisco.

SECTION ON PEDIATRICS

Chairman, Dr. William Palmer Lucas, University Hospital, San Francisco.

Secretary, Dr. Hugh K. Berkley, Brockman Building, Los Angeles.

SECTION ON NEUROPSYCHIATRY

Chairman, Dr. Walter F. Schaller, 909 Hyde Street, San Francisco.
Secretary, Dr. W. B. Kern, Brockman Building, Los Angeles.

SECTION ON GENERAL SURGERY

Chairman, Dr. Charles D. Lockwood, 295 Markham Place, Pasadena.
Secretary, Dr. Edmund Butler, Butler Building, San Francisco.

SECTION ON EYE, EAR, NOSE AND THROAT

Chairman, Dr. Frank A. Burton, Watts Building, San Diego.
Secretary, Dr. Harvey McNaught, Butler Building, San Francisco.

SECTION ON UROLOGY

Chairman, Dr. George W. Hartman, 999 Sutter Street, San Francisco.
Secretary, Dr. Louis Clive Jacobs, 462 Flood Building, San Francisco.

SECTION ON ORTHOPEDIC SURGERY

Chairman, Dr. W. W. Richardson, Brockman Building, Los Angeles.
Secretary, Dr. G. J. McChesney, Flood Building, San Francisco.

SECTION ON ANESTHESIOLOGY

Chairman, Dr. Mary E. Botsford, 807 Francisco Street, San Francisco.
Secretary, Dr. Eleanor Seymour, 308 Consolidated Realty Building, Los Angeles.

SECTION ON GYNECOLOGY AND OBSTETRICS

Chairman, Dr. Harry M. Voorhees, Brockman Building, Los Angeles.
Secretary, Dr. L. A. Emge, Stanford University Hospital, San Francisco.

SECOND SEMI-ANNUAL MEETING OF THE COUNCIL OF THE STATE SOCIETY AND THE OFFICERS OF CONSTITUENT SOCIETIES

The second semi-annual meeting of the State and constituent society officers was held in San Francisco on Saturday, September 24, 1921. The meeting was well attended by forty-one delegates, representing constituent societies from nearly every part of the State. Several of the local societies unfortunately were not represented.

It was a splendid meeting with a definite program which elicited much discussion and was carried out in a series of resolutions. Dr. John H. Graves, president of the State Society, presided, and short addresses were given by President Graves, Dr. Dudley Smith, president of the League for the Conservation of Public Health, Mr. Hartley F. Peart, general counsel for both the State Society and the League, and a number of other representatives. The importance and effectiveness of these semi-annual meetings of the Council and officers of the various societies is indicated by the following series of resolutions passed unanimously at this meeting:

1. Monthly Report of County Secretaries:

RESOLVED, That the Council of the State Medical Society and the officers of constituent societies meeting in joint session unanimously endorse and approve the program of monthly reports by secretaries of constituent societies to the State Society. It is to the best interest of medicine for the public and the profession that these reports be forwarded every month and made as complete as possible, regardless of whether the society holds a meeting or not.

2. Constituent Society Representation at the State Meeting:

RESOLVED, That the Council of the State Medical Society and the officers of constituent societies, meeting in joint session, unanimously endorse and approve the policy of the State Society's including in the program of annual meetings arrangements for one or two joint meetings between the council and the officers of constituent societies as part of the official program. It is understood that this will necessitate the presence at each State meeting of the officers of each constituent society in an official capacity;

(b) That care be used in the selection of delegates and alternates of constituent societies

to the State meetings, so that the House of Delegates may be truly representative; and that it be interpreted as a most important public duty for the delegates and alternates to attend the State meetings; and

(c) That, whenever the officially elected delegates and alternates fail to attend the State meeting for any legitimate reason, the president or secretary of the society, who will be present in another official capacity, may act as delegate.

3. Change of Officers:

RESOLVED, That this joint meeting go on record as unanimously in favor of a policy that will insure, as far as may be, a fair degree of permanency in the secretary's office of constituent societies. To this end, it is our opinion and our recommendation that constituent societies select their secretaries with the greatest care and that frequent changes in this office be avoided.

(b) In order further to secure consecutive policy in the constituent societies, we recommend that all constituent societies elect in addition to the secretary an assistant secretary, who shall be an understudy to the secretary and who for any legitimate reason shall assume the duties of secretary.

4. Training of Officers for Medical Organizational Purposes:

This body unanimously recommends that the State Society prepare an adequate outline of the duties of president, vice-president and secretary-treasurer of constituent societies, and that the State secretary be requested to present this program at the next meeting of this joint body for consideration.

(b) In order that officers of the State and constituent societies may serve their purpose in the most useful way, we recommend that it be part of the official duty of officers of constituent societies when in San Francisco to visit the State offices for the discussion of special problems peculiar to our organization.

5. Stated Meetings of the State and Constituent Society Officers:

RESOLVED, That this body unanimously endorse and approves the policy of definite meetings of State and constituent society officers as follows: One or two meetings at and during the annual meeting and one midyear meeting, to be held alternate years in Los Angeles and San Francisco.

6. Program Arrangements for Constituent Societies:

RESOLVED,

(a) That each constituent society prepare and execute each year one special program; that this program be sent to the State secretary, who will give it publicity, with the hope that it will be taken in toto as the program of another society;

(b) That the program committee of the State Society be requested to prepare and issue to all societies one or more uniform programs, to be discussed at the same monthly meeting by every society in the State. These programs should relate to subjects of importance to all members of the profession;

(c) That it be understood to be a duty of the councilor for each councilor district to visit at least one meeting a year of each constituent society within his district; and that he, in the discharge of this duty, should arrange with the secretary of the society to be visited for the program for that particular meeting; provided, that each councilor report on the execution of this part of the program at the State meeting;

(d) That the policy of a certain number of open meetings for each constituent society is approved and recommended. In the opinion of this body each constituent society should hold not less than one nor more than three open

meetings a year, to which the general public shall be invited and which may or may not include speakers not medical men. In our opinion programs of this character should have the approval of the State program committee before being given;

(e) That the county program committees should seriously consider, at least in small counties, variations in the location of the meeting place, using different towns in the county for different meetings, and often in smaller places holding the meetings at the residences of individual members;

(f) Joint meeting of more than one society. This body approves as good policy an occasional joint meeting between small groups of constituent societies suitably located for this purpose. Programs at these meetings may be held either by one society, with the other societies as guests, or arrangements may be made for a combined program in which each of the societies of the group shall be interested;

(g) That the program committee of the State Society, under the chairmanship of the secretary, be used as a clearing house for all program work of constituent societies throughout the State; that it be interpreted to be a duty of the State and local secretaries to confer by correspondence or otherwise in making plans for advance programs; and that each constituent society have a list of programs as far as possible in advance of the meetings.

7. Extension Work of the State Society:

RESOLVED, That this body endorses and approves the idea of the State Society's developing and maintaining an extension program that will provide a list of available subjects and speakers, from which local program committees may select and extend invitations as they desire.

RESOLVED, That we urge and recommend that this extension program be expanded to include clinics, lectures, research work, etc., in the larger centers, this program to be arranged in short all-day courses of from one to four weeks each, beginning and ending upon definite dates.

8. County Editors:

RESOLVED, That this body recommend to the Council: that the present system of county associate editors for the State Journal be discontinued, and that instead the secretary of each constituent society ex-officio act as editor for his county or district.

The next semi-annual meeting of this official body will be held during the State Meeting in Yosemite next May.

The secretary of the State Society invites correspondence on matters which should be taken up at these meetings. Any local society that has a question it wishes discussed may refer it to the office of the State secretary, and it will be placed in the files for the next succeeding meeting.

COUNCIL OF THE STATE SOCIETY

(Abstract of the Minutes of the 127th and 128th Meetings)

Dr. Joseph Catton was sent by the Council to represent the California State Society at the Nevada State Society's annual meeting. The Nevada State Medical Society House of Delegates passed a resolution making the California State Journal of Medicine the official organ of the Nevada State Medical Society, and also passed a resolution appointing a small committee with power to act, further extending relations between the California and Nevada Societies.

Dr. Alfred C. Reed represented the California State Society at the annual meeting of the Utah State Society in Salt Lake. Dr. Reed received a most cordial reception in Utah, and the House of Delegates took actions which will be for the betterment of medicine in the western States.

Membership Card: The secretary presented a design for a membership card, which was adopted, and the secretary was instructed to furnish one of these cards to every new member and to every member annually as his dues are paid, this card to be considered the official notice of membership in good standing for the current year.

The Council approved the policy of requesting the League for the Conservation of Public Health to issue a uniform system of clinical and other record forms for hospitals throughout the State. Two forms, that of anesthesiology and operating-room record form, were specifically approved and recommended to the League for introduction into hospitals with the endorsement of the State Society.

Medical Histories of Various Counties of California: The Council endorsed a suggestion to various constituent societies that a profitable meeting devoted to discussion of the subject of the medical history of each county might be held during the coming year. It was suggested that discussion at this meeting should note by name and brief biographical history the medical men who have contributed to the advancement of medicine, public health and social betterment in the county and who have passed away; lives of living men, except those who have entirely retired from practice, not to be included in the biographies. The meeting should bring out the story of the progress of the practice of medicine and public health, social betterment and health influences in the advancement of civilization of the county from early days until the present. Facts brought out at these discussions might very well be written up and forwarded to the State secretary for compilation and use, at least in part, in some editorial way. The complete record ought to form part of the archives of the medical profession of this State. It is believed by the Council that a meeting of this character could be made both interesting and instructive to members of the medical profession and the public, each organization to decide for itself the advisability of having these open meetings and inviting the public to be present. It might be well to have on these programs certain prominent persons of the community interested in recording the medical and public health history of their communities and who themselves are not physicians.

Nursing Situation: The Council approved the suggestion that the secretary call the attention of various constituent societies to the importance of arousing interest in the nursing profession and in schools of nursing. It was suggested that one meeting, which should be an open meeting with the public invited, be arranged for discussing the nursing situation in each county of the State. That meeting should bring out the needs for applicants to fill the ranks of this profession, its advantages as a career for women, and it should be an appeal to young women prepared to do so to take up this profession.

Shepherd-Towner Bill: Correspondence and documents regarding the Shepherd-Towner bill having been brought to the attention of the Council, after due discussion the following resolution was unanimously passed:

RESOLVED, That the medical profession of California endorses the stand taken quite generally by the medical profession throughout the country with reference to the Shepherd-Towner bill. The need of better maternity opportunities, as well as the need for better medicine and better public health opportunities in general, is fully realized by the medical profession, who are duly sympathetic and vitally interested in bettering these conditions. However, they are most positively opposed to the method proposed or to any other method that is based upon varying forms of social health insurance, of which the Shepherd-Towner bill is one. Therefore, the publication of any literature endorsing this bill directly or indirectly does not meet with the approval of the Council;

RESOLVED FURTHER, That the editor of the Journal be instructed not only to refuse publication of any matter favoring health insurance or State medicine or similar activities, but whenever or wherever it may be done judiciously the editorial columns of the Journal are to be used against any or all such movements.

Provisions for Retirement: The following resolution was presented to the Council:

RESOLVED, That the State Society approves a policy of making provision in its constitution and by-laws for retired members;

RESOLVED FURTHER, That it be suggested to the Councils of the various constituent societies that they consider this matter for their own organizations. It is recommended that retirement be permitted for any physician who is no longer engaged in the practice of medicine or in income-producing effort in any medical or public health field, under such conditions as any local society may approve, the retired member to pay \$1.00 a year to his local organization and \$1.00 a year to the State organization: Provided, that such retired member has been continuously for the period of two years next preceding his retirement a member in good standing in his local society. For this small amount he is to be continued during life as a retired member in good standing, entitled to all of the privileges of active members, except legal defense, and subject to the same discipline.

The Council approved the policy laid down in this resolution and recommended that it be considered by the Councils of various constituent societies and submitted for their joint action at the meeting of the Council with the officers of constituent societies to be held in Yosemite next May.

About Advertising: The Council passed unanimously a resolution as follows:

RESOLVED, That no advertising matter from physicians offering their professional services shall be printed in the Journal except from a member or members of a State medical society in good standing, or one who has made application for membership and whose application is still pending.

Indemnity Defense Fund: Discussion was had as to the present condition of the Indemnity Defense Fund and as to what steps could be taken to bring the existence of the fund and the advantages of becoming a member to those doctors who have not already joined the same. Discussion also included consideration of the limited number of commercial companies now in this field and the advantages of perfecting the society's own defense without reference to any outside insurance. Pursuant to the desirability expressed above of increasing the membership in the Indemnity Defense Fund and bringing the advantages of becoming a member to all doctors who have not joined, it was voted that a one-half page of the advertising columns of the Journal be placed at the disposition of the Indemnity Defense Fund each month for such copy as the attorney should see fit to use in it.

Extension Work

Extension work of the State Society was discussed editorially in the August issue of the Journal. The subject was given consideration at the recent semi-annual meeting of state and county society officers. Those interested in the problem should read the resolutions published in the proceedings of this semi-annual meeting in the November issue of the Journal, page 448.

The following list of speakers and their subjects has been completed. Others will be added to the list and published from time to time.

Societies may invite any of these speakers directly or they may send their requests to the State Secretary.

Alfred C. Reed, M. D.,

350 Post Street, San Francisco.

1. Heart Disease in Everyday Practice.
2. Diagnosis and Treatment of Amebic Colitis.
3. Vitamines and Food Deficiency Diseases.

Eugene S. Kilgore, M. D.,

391 Sutter Street, San Francisco.

1. Irregularities of the Heart:

A brief discussion of the seven most common cardiac arrhythmias (sinus arrhythmia, heart block, extra-systoles, paroxysmal tachycardia, flutter, fibrillation, and alternating pulse). Special emphasis is placed upon the clinical bearing of these irregularities as they affect prognosis and treatment; also upon simple ways of recognizing them without special instruments.

2. The Treatment of Infections of the Heart and Aorta:

Bacterial infections are often insidious and overlooked during active stage, when rest and not digitalis is needed. Presence or absence of systolic murmurs often misleading. During healed or quiescent stage of endo-, myo- or pericarditis are problems, which vary greatly in different cases, of adjusting lead to preserve compensation. During decompensation beware of reinfection. Means of lessening the heart's work and helping it meet minimal requirements. Newer suggestions in use of digitalis and quinidine. In syphilitic infections intensive and long-continued anti-luetic treatment is essential, but the greatest difficulty lies in sufficiently early diagnosis. Diversity of early symptoms. Aid from suitable X-rays.

3. The Handling of Hypertension Cases:

Prophylaxis involves heredity, infections, and strenuous living. Importance and difficulty of early recognition. Experience with college students. Futility of late eradication of focal infections.

Fully developed cases may, to slight extent, avoid the hazard of apoplexy, may be safeguarded somewhat against renal failure, but can accomplish most in prolonging circulatory efficiency. Disappointment in pressure-lowering drugs. Use of digitalis. Value of regimen and schooling, especially to avoid heart "bumping." Blood-letting. Treatment of acute decompensation.

H. Lissner, M. D.,

240 Stockton Street, San Francisco.

- I—The More Important Diseases of Ductless Glands; Their Clinical Signs and Symptoms. (Illustrated by lantern slides.)

- (a) Thyroid—

- (1) Exophthalmic goiter.
- (2) Toxic adenoma.
- (3) Myxedema.
- (4) Sporadic cretinism.

- (b) Pituitary—

- (1) Gigantism.
- (2) Acromegaly.
- (3) Infantilism.
- (4) Dystrophia adiposa-genitalis.

- II—The Less Well Known Diseases of Ductless Glands.

- (a) Parathyroid—

- (1) Tetany.

- (b) Adrenal—

- (1) Addison's disease.
- (2) Pseudohermaphroditism.
- (3) Precocious sexuality.

- (c) Pineal—

- (1) Precocious sexual development.

- (d) Thymus—

- (1) Status thymus-lymphaticus.

- (e) Testicles—

- (1) Eunuchoidism.

- (f) Ovaries—

- (1) Menstrual disturbances.

(2) Menopausal disturbances.

(3) Ovarian obesity.

(4) Precocious sexuality.

(g) Placenta, mammary, prostate, pancreas, spleen.

III—Hypopituitarism and Its Treatment. (Illustrated by lantern slides.)

(a) Levi Lorain infantilism.

(b) Froelich's dystrophy adipose-genitalis.

(c) Post-adolescent hypopituitarism.

(d) Pituitary obesity.

(e) Pituitary amenorrhoea.

(f) Pituitary headache.

(g) Pituitary epilepsy.

(h) Pituitary psychoses.

(i) Diabetes insipidus.

The clinical signs and symptoms, and the treatment of the above conditions.

IV—The Therapeutic Effects of Pituitary Extracts.

(a) Pressor effects on the circulatory, alimentary and urinary symptoms, the uterus and the spleen.

(b) Antagonistic effects in hyperplasia of other ductless glands.

(c) Supplementary effects in hypopituitarism.

(d) The different preparations of pituitary extract and methods of administration and dosage.

V. The Differential Diagnosis Between Exophthalmic Goiter and Toxic Adenoma; the treatment of each.

(a) Clinical course.

(b) Signs and symptoms.

(c) Prognosis.

(d) Medical treatment and results.

(e) X-ray and radium.

(f) Surgical procedures.

(g) Diagnostic tests.

(h) Basal metabolism as a help in diagnosis and as a guide in treatment.

VI—The General Principles That Should Govern the Treatment of Ductless Gland Disease.

(a) In hyperactivity—inhibitory agents.

X-ray, radium, sedatives, surgery, antagonistic organ extracts.

(b) In hypoactivity—supplementary feeding.

(c) Monoglandular therapy; pluriglandular therapy; advantages and disadvantages of each.

(d) Properly controlled clinical observations as an essential feature of future progress.

Nelson W. Janney, M. D.,

Pacific Mutual Building, Los Angeles.

1. Relation of Basal Metabolic Studies to Clinical Medicine.

2. The Treatment of Diabetes Mellitus With Special Reference to Problems of the General Practitioner. (Illustrated with lantern slides.)

3. The Diagnosis and Treatment of Hypothyroidism. (Illustrated by lantern slides.)

Samuel H. Hurwitz, M. D.,

516 Sutter Street, San Francisco.

1. Modern Aspects of the Treatment of Diabetes.

2. High Blood Pressure; Its Significance and Management.

3. The Treatment of Asthma.

4. The Value of Certain Modern Laboratory Procedures in the Diagnosis, Prognosis and Treatment of Disease.

James T. Watkins, M. D.

Medical Building, San Francisco.

1. The Diagnosis and Treatment of Back Injuries.

2. The Latest Advances in Orthopedic Surgery.

Alson R. Kilgore, M. D.

391 Sutter Street, San Francisco.

I—The Question of Exploring Breast Tumors for Diagnosis.

Impossibility of absolute clinical diagnosis in early stage.

Experience shows that exploration followed by immediate operation for cancer is safe. Exploration with delay for pathological diagnosis almost 100 per cent fatal for certain types of cancer, because metastasis is stimulated.

Findings at exploration make it possible to tell even without frozen section whether tumor is benign or malignant in 90 per cent of cases.

Discussion of exploration appearances:

(a) Positive evidences of benignancy.

(b) Positive evidences of cancer.

(c) Borderline or doubtful group.

Lantern slides.

II—The Pre-cancerous Lesions of the Breast.

Not all breast lesions are likely to degenerate into cancer.

Importance of recognizing the pre-cancerous lesions, because of differences in extent of operative removal required.

Discussion of clinical and exploratory diagnosis and operative indications in each:

(a) Paget's eczema of the nipple.

(b) Residual of breast abscess (lactation mastitis).

(c) Galactocele or milk cyst.

(d) Single cyst containing papilloma.

(e) Multiple cysts with papillomas—cystic breast—Schimmelbusch's or Reclus' disease.

Lantern slides.

III—The Diagnosis of Bone Tumors, Clinically, by X-ray and at Exploration—Operative Indications of Each.

Classification of the various bone tumors.

Clinical significance of age of patient, location in skeleton, duration of symptoms, pain, pathological fracture.

Rules for interpretation of X-ray appearances. Diagnostic findings at exploration.

Indications for treatment in each type of tumor.

Demonstrations of Illustrative X-rays and photographs of specimens. Lantern slides.

IV—The Problems of Early Cancer.

Summary of statistical studies demonstrating permanent curability of early as opposed to late cancer.

Increasing difficulty of diagnosis as patients are educated to come early.

Necessity for establishing rules of procedure in the various types of early cancer:

(1) Lip cancer.

(2) Other mouth cancer.

(3) Skin cancer.

(4) Breast cancer.

(5) Uterus cancer.

(6) Bowel cancer.

(7) Internal cancer.

Relation of syphilis to cancer, with special reference to its bearing on anti-syphilitic treatment of doubtful lesions.

Present status of radium and X-ray in cancer treatment.

A. B. Cooke, M. D.,

Hollingsworth Building, Los Angeles.

1. The Nature and Management of Hyperthyroidism.

2. The Classification and Differential Diagnosis of Goiters.

3. Surgical Aspects of the Goiter Problem.

John Hunt Shepard, M. D.,

San Jose, California.

1. Our Knowledge of the Thyroid Gland.

Henry E. Dahleen, M. D.,

San Jose, California.

1. The Diagnosis of Urinary Lesions.

Joseph Catton, M.D., 209 Post St., San Francisco.

1. **The Injured Head.** What do its symptoms indicate after the first month?

Headache, vertigo, insomnia, irritability, memory defects, asthenia and other symptoms may characterize the case of head injury after the immediate symptoms have cleared away. The same symptoms may be present with definite brain lesions which are demonstrable by present clinical methods; with non-demonstrable organic lesions; or with functional brain derangement variously called traumatic, post-traumatic, or traumatized neuroses. Discussion of methods of attack in determining the basis of the symptoms in a given case; present diagnostic limitations; treatment.

2. **Disease and Disability.** Their dissection into the facts, the functional and the feigned.

Dealing with the methods of differentiation of organic, functional and malingering conditions. The importance of such differentiation for proper treatment for patient; for equitable decision as regards liability by courts and commissions; to prevent the doctor being a party to fraudulent claims.

3. **The Doctor Before the Bench.** Considering the conduct of a doctor both before courts and commissions, and in making examinations and reports which find their way to judicial tribunals.

Consideration of the attitude towards patients and their representatives in cases with liability features; the attitude towards representatives of the other side of the case; the attitude towards other doctors who have examined the case. The differences between everyday reports and those in liability cases. The attitude as a witness, including examinations, reports and testimony in industrial accident cases.

4. **Psychoanalysis.** Considered as a "Fringe of Medicine."

Brief story of its development and history. Description of the psychoanalytic method. Its uses. Its abuses. Consideration of its exploitation by laymen, and the resultant danger to public morals, public health and public safety. Its place in medicine in the hands of the neuro-psychiatrist; in the hands of the general practitioner. Its place outside medicine as a sister-cult with Eddyism, adjustmentism, pressureism and the rest. Consideration of the attitude of neglect of use of well-founded scientific mental therapeutic methods, by the medical profession. How the latter leads to the development by and for the members of what Munsterberg has aptly termed "The Intellectual Underworld"—of unscientific practices aimed at the cure of disease, and in many instances more particularly at the accumulation of finance.

Book Reviews

"Modern Italian Surgery and Old Universities of Italy," by Dr. Paolo De Vecchi, 43 Fifth avenue, New York City, N. Y. Published by Paul B. Hoeber, New York.

The many friends of Dr. De Vecchi, formerly a prominent and much beloved physician of San Francisco, will read with pleasure the volume which he has recently published.

At the close of the war, Dr. De Vecchi spent more than a year in Italy for the purpose of collating the medical history of the Italian campaigns. The results of his inquiry he has recorded in the first hundred pages of this volume, thereby making a notable contribution to the literature of war surgery and sanitation. The last half of the work is devoted to a brief account of the educational institutions of Italy.

Dr. De Vecchi's long residence in Italy, his native country, and his deep interest in all that

pertains to the Italians, has given him peculiar facility for this undertaking. T. W. H.

General Pathology. By Horst Oertel. An Introduction to the Study of Medicine. New York: Paul B. Hoeber, 1921.

This treatise on General Pathology by the Strathcona Professor of Pathology of McGill University is interesting in many respects. The absence of all illustrations in a text on pathology is one striking feature. In this connection, Professor Oertel states that "the emphasis has been put on discussion of the nature and development of pathological processes, and it is assumed that laboratory experience will supplement the use of the book."

To the writer of this review it has always been questionable whether in a general pathology the profuse illustrations now so commonly introduced are really necessary or even desirable, because they distract the student's attention from the text and sometimes give rise to erroneous impressions. They certainly can replace in no way the actual handling of the material in the laboratory.

Book one on etiology consists very largely of a brief description of various pathogenic bacteria. This to my mind is the least satisfactory part of the book, because it contains too much bacteriological detail and too little that is of interest of the point of view of general pathology. The emphasis placed on matters historical is commendable and the parts dealing with this side of the subject might be amplified. If the portion dealing with bacteriology were reduced to proper proportions, space would be gained for a fuller presentation of the subjects dealt with in book two—on pathological anatomy, histology and pathogenesis—which in places is so brief as to be confusing, especially to beginners.

On the whole, the book is an interesting attempt to present an old subject in a new way. W. O.

Edgar A. Poe—A Study. By John W. Robertson, M. D. Printed in San Francisco, Cal., by Bruce Brough, 1921.

Of all the studies of the life of Edgar A. Poe, this which was undertaken by Dr. John W. Robertson is the most unique, because it is an analysis of the underlying psychopathic basis of Poe's dramatic life. Other men have compiled his writings and elaborated biographies. However, they are most unfortunately based upon a premise of error. In nearly every instance they take their fundamental misinformation from a biography by Griswold.

This man, immediately upon the death of Poe, through underhanded methods gained possession of all his writings and compiled a most scurrilous biography defaming the name of one of the greatest literary men of the age. Griswold had a deep-seated jealousy of Edgar A. Poe, and after the death of the poet he spent his venom upon the name. It is largely owing to the writings of this detractor that we consider Poe a drunkard and a degenerate. He was belied.

Poe was essentially a psycho-neurotic, a morbid genius, a hypersensitive soul, a man of fine dreams and most tender sentiments. He was loyal and loving to his wife and mother-in-law and to those who were fortunate enough to be his intimate friends. He was, however, cursed with periodic alcoholism. This study made by Dr. Robertson shows very clearly that the man was abnormally sensitive to alcohol and that a small amount brought on a pathological state which was often taken for gross intoxication.

It is clearly shown also that drugs in no way entered into the life of this great poet. He was not, as has been claimed, ever under the influence of opium and other hypnotics. His death, undoubtedly influenced to some extent by alcoholism, was clearly one resulting from pneumonia and terminal meningitis, and not the base, inglorious exit de-

scribed by his malignant biographer Griswold. Unfortunately, it was on this biography that Lauvrière based his psychopathic study of Poe, and his statement as to the effect of alcohol and opium in the genesis of much that Poe wrote has proved more injurious to his memory even than Griswold's prejudiced memoirs. Probably the greatest service Dr. Robertson has rendered is in the complete annihilation of Lauvrière psychopathic deductions.

Dr. Robertson has collected and has in his possession practically the entire writings of Edgar A. Poe. For more than thirty years he has made a study of his life and literature. That portion of his book which deals with the bibliography is most fascinating. The physician alone is capable of understanding and interpreting the basic emotions which governed the career of this unfortunate poet. This book will become a standard by which a true estimate of Poe can be obtained.

Saxton Pope.

County Societies

Alameda County Medical Association (reported by Dr. Pauline S. Nusbaumer, secretary)—The September meeting of the association was held at Oakland Health Center, September 19, with about 100 members present.

Dr. M. L. Emerson's subject was "Falciform Ligament Tug, Causing Intra-abdominal Distress." He reported seven patients in which operation showed bands of organized areola tissue originating in the fold of the falciform ligament of the liver, perforating the transversalis fascia and linea alba, causing a resistant tug on the falciform ligament and symptoms of abdominal distress. In accordance with Moskovitz's studies these would all have been classed as epigastric hernia. Emerson considers the operative technique a minor procedure which should be performed through a small incision, if possible, in order not to make it appear that the patient has had an extensive abdominal operation. He believes the term "epigastric hernia" to be a misnomer.

Dr. C. A. Dukes's subject was "Cysts of the Long Bones, with Report of Two Cases." The first patient, a boy of eleven years, was operated by Dr. Dukes in 1908. The diagnosis was spontaneous fracture of the neck of the right femur, due to a large bone cyst. An incision was made over the swollen area and the cyst curetted. A Lane plate was placed for the purpose of maintaining position. Uneventful recovery followed and X-rays taken recently show the plate in perfect position, and there was normal functioning of the leg without shortening. Dukes's second patient, seen in 1918, was a boy seven years of age, with a fracture of the right humerus at the neck. X-ray showed a large bone cyst with swelling of the shoulder. Incision was made and the cyst curetted. The arm was maintained in position by a splint. The patient made a satisfactory recovery with no deformity or loss of function. Dukes calls attention to the rarity of true bone cysts, and also to the fact that a metal plate may be retained in position indefinitely.

Dr. S. H. Buteau's subject was "A Plea for More Frequent Consultations and for the Practice of Group Medicine." Buteau considers that the science and art of medicine have grown beyond a masterly comprehension by any one individual. The surgeon and the internist who have reached more than mediocre success are representative of two distinctly opposite types of mind—the surgeon, the objective type; the internist, the subjective type. These two types are rarely blended in one, hence specialism is more than selective, it is largely physiological. If we accept the above statements, more frequent consultations, or, better still, the practice

of group medicine, becomes imperative for the best interests of the sick.

A number of case histories were presented to the meeting and a number of members took part in the discussion on the subjects comprising the program.

Dr. Belle Ellingsen Merrill, Dr. Clyde T. Wetmore, Dr. Waldron A. Gregory and Dr. Isabelle Armstrong were elected members of the association.

At the October meeting of the staff of the Merritt Hospital, Dr. W. A. Clark was elected chief of the gynecological staff. The program was as follows: The Preparation of the Surgical Patient, by Dr. W. E. Mitchell; Heart Block, by Dr. A. A. Alexander; Councilmania Infection, by Prof. C. A. Kofoid.

Imperial County (reported by Dr. H. W. Owen, secretary)—The first meeting of the county society following the hot season will be held on the second Thursday in November.

Dr. Owen has submitted some advertising matter from a chiropractor who makes unusual claims even for that particular cult. This fellow claims that tonsillitis is caused by subluxation of the lower cervical vertebrae, and he apparently does not appreciate the fact that the nerves that supply the tonsils are cranial nerves and not spinal nerves at all.

Merced County (reported by Dr. Brett Davis, secretary)—The October meeting was held in the office of the secretary with eight members present and twelve absent. Dr. A. R. Kilgore of San Francisco was present and discussed the subject of "Bone Tumors." His lecture was illustrated by lantern slides. Doctors Fountain, Davis, Zirker, Lilley, Parker, Mudd, Cotton and Williams took part in the discussion.

Placer County (reported by Dr. Robert A. Peers, secretary)—The Placer County Medical Society held its regular meeting in the Masonic Temple, in Auburn, Saturday evening, October 8, 1921. In the absence of the president, Dr. Charles J. Durand, the vice-president presided. Dr. John A. Russell, of Auburn, was elected a member of the Society. The secretary presented to the members of the Society a resumé of the work which has been done by the League for the Conservation of Public Health and set forth, in addition, some of the problems with which the League would be confronted in the future. He made an appeal for the support of each individual member of the Society to the end that the work which the League is carrying out should be as uniformly successful in the future as in the past. Doctors E. H. Falconer and J. H. Woolsey, of San Francisco, also spoke briefly on the same subject.

The literary program consisted of two very excellent addresses, one by Dr. J. H. Woolsey, Instructor in Surgery, of the University of California, on Tumors of the Thyroid with Especial Reference to Adenoma, and the other by Dr. E. H. Falconer, Assistant Clinical Professor of Medicine, of the University of California, on Practical Application and Uses of Blood Transfusion.

The next meeting of the Society will be held in Auburn, early in December.

San Bernardino County (reported by Dr. Eyttinge, secretary)—The October meeting was held at the San Bernardino County Hospital with forty-five members and fifteen guests present and fifteen members absent. Dr. C. F. Whitmer reported on the semi-annual meeting of the State and constituent society officers recently held in San Francisco. Mr. Celestine J. Sullivan, executive secretary of the League for the Conservation of Public Health, and Dr. W. T. McArthur of Los Angeles, made an appeal for support of the League and its work by

members throughout the State. The response on the part of the members of San Bernardino County was generous and prompt.

It being the annual meeting of the society, Dr. L. M. Coy, San Bernardino, was elected president; W. D. Lenker, San Bernardino, first vice-president; J. H. Shreck, Redlands, second vice-president, and E. J. Eytinge of Redlands, secretary.

Doctors V. G. Alderson, Chino, D. C. Mock, Redlands, and A. S. Leven, Arrowhead Springs, were elected new members of the society.

San Diego County (reported by Dr. Robert Pollock)—The County Hospital has engaged the services of a full-time dietitian. They are looking for a laboratory technician and for a full-time house physician, preferably a young man recently graduated. The hospital has thirty-three pupil nurses, which is an increase of sixteen over last year. A few more can be accommodated at the beginning of the new term, December 1.

The hospital school of nursing had a booth at the recently held county fair which attracted considerable attention. There were three nurses in attendance demonstrating a practical hospital bed and hospital appliances, giving bedside demonstrations of practical nursing and distributing information pertaining to the school of nursing. The school has instituted self-government, making its own rules and regulations.

The Vaulain Home for the Tuberculous has been redecorated and has increased its nursing staff.

The September meeting of the Medical Society was held in the auditorium at St. Joseph's Hospital. Dr. A. B. Wessel's paper on the "Complications in Adenoid Operations" was discussed by Drs. Burton, Brown and Doig.

Dr. R. K. Barry's paper on the "Relation of the Cardiac Arrhythmias to Cardiac Disease" was discussed by Dr. Churchill.

The October meeting of the society will be a clinic at the County Hospital.

At a meeting of the medical staff of St. Joseph's Hospital, held on Tuesday, September 27, the report of the hospital service for the months of June, July and August was read. Constructive criticism was offered by a number of the members, tending to make these reports more distinctly valuable. The questions of greater efficiency and economy of time in the operating room and the laboratory were discussed.

The board of directors of the Medical Library Association held their last meeting for 1921. The library is nearing the close of its seventh year of successful service.

Dr. Louis Strahlmann of San Diego has recently been appointed County Health Officer, vice Dr. Geo. B. Worthington, resigned.

San Francisco County (reported by Le Roy Briggs, secretary)—During the month of September, 1921, the following meetings were held:

Tuesday, September 13—General Meeting

1. Blood transfusion, practical points in the selection of donors. E. C. Dickson.
2. Technique of transfusion, comparison of methods. Harold Brunn.
3. Indications for and results of transfusion in surgical cases. Leo Eloesser.
4. Indications for and results of transfusion in medical cases. W. F. Cheney.

Tuesday, September 20—Section on Surgery

1. Accidental hemorrhage during pregnancy. K. L. Schaupp.
2. Severe hemorrhage in pregnant women due to tumors of fetal tissue. F. W. Lynch.
3. Vaginal drainage with presentation of new instrument. F. R. Girard.

Tuesday, September 27—Section on Eye, Ear,

Nose and Throat

1. Toti-Mosher external and internal tear sac operation; case of tubercular dacryocystitis. A. C. Gibson.
2. Demonstration of eye cases. Hans Barkan.
3. Demonstration of cases and new methods.

San Francisco County—November program:

Section on Surgery

Tuesday, November 15, 1921—8:30 p. m.

1. Pyelitis in pregnancy with report of an unusual case. J. A. Sperry and Sidney Olsen.
 2. Fractures in transplanted bone. S. L. Haas.
- Eye, Ear, Nose and Throat Section
Tuesday, November 22, 1921—8 p. m.

1. Demonstration of cases.
2. Study of bacterial cultures of the nose and throat of children during health and sickness. W. P. Lucas.
3. Three cases of radical mastoid with sinus complications. H. J. Cohn.
4. Remarks on work in European clinics. H. B. Graham.

San Joaquin County Medical Society (reported by Dr. Dewey R. Powell, secretary)—The regular meeting of the San Joaquin County Medical Society was held Friday evening, September 16, Vice-president Linwood Dozier presiding. Those present were: Drs. L. Dozier, H. Smythe, E. A. Arthur, H. E. Sanderson, B. F. Walker, F. J. Conzelman, F. J. O'Donnell, J. V. Craviotto, B. J. Powell, R. T. McGurk, H. C. Peterson, J. D. Dameron, H. S. Chapman, H. C. Price, F. S. Marnell, L. Haight, W. J. Young, J. W. Barnes, G. J. Vischi, Minerva Goodman, D. R. Powell; and Drs. E. C. Fleischner, Eugene Kilgore and K. F. Meyer of San Francisco as guests of the evening.

Dr. Eugene Kilgore of San Francisco spoke on "Some Modern Conceptions of Treatment of Circulatory Disorders." He divided the heart infections into bacterial infections, syphilitic infections and miscellaneous infections. In the treatment of the bacterial infections he spoke of the importance of early recognition; the elimination of focal infections; the regulation of the life of the patient to avoid decompensation, and when decompensation does take place to avoid reinfection. He emphasized the importance of rest in bed under these conditions, the importance of the position in bed and the control of the diet and fluid intake. The drug most used in these cases is tincture of digitalis in large doses. He also spoke of the good results obtained from quinidin.

In the treatment of the syphilitic conditions he emphasized the importance of the case history and the early recognition of the disease, the X-ray of the arch of the aorta was particularly important. The treatment preferred was a preliminary series of mercury for ten days and then small and increasing doses of salvarsan alternating with mercury, also supplementary treatment with potassium iodide.

In the miscellaneous cases of heart trouble he spoke of hypertension and the sclerotic types. The first thing here was to increase rest, prevent undue exercise and overloading of stomach and to teach the patients how to adjust themselves to their condition. Kilgore's subject was discussed by Dr. E. A. Arthur, Dr. J. D. Dameron and Dr. R. T. McGurk.

Dr. C. E. Fleischner of San Francisco spoke on the treatment of Diphtheria. The important contribution of Schick in 1913, when he introduced the intra-cutaneous test bearing his name for the determination of the susceptibility of immunity to diphtheria, was emphasized. This test has proven quite accurate in many thousands of cases and has given us the statistical information that in the first six months of life 80 per cent of the children are

immune. From six to twenty-four months there is a decrease in the percentage of immunity, so that at two years there is practically only 20 per cent immune and 80 per cent susceptible. From two to twelve years the percentage of immunity again arises, so that at twelve years of age about 80 per cent are again immune. By the use of toxin-antitoxin mixture the patients found to be susceptible can be rendered immune by three subcutaneous injections one week apart. After the first injection 80 per cent are immune, after the second 90 per cent, and after the third 97 per cent. In treating cases of diphtheria Fleischner emphasized the importance of the earliest possible administration of the antitoxin and the necessity of giving an ample dose at the first injection and then no more; also, he emphasized that the intravenous method was by far the most efficient, stating that 10,000 units intravenously was equivalent to 40,000 intramuscularly. The speaker felt that, with the methods now at our disposal, diphtheria could be absolutely controlled and that in a few years' time should be stamped out.

Dr. K. F. Meyer, of the University of California Hospital staff, spoke on Bacillary Dysentery. He spoke of the large number of carriers who were harmless during the winter but dangerous during the summer time, and particularly when out in camp. He emphasized the importance of the proper method of stool examination in order to determine the presence of the bacilli. The serum treatment has proven quite efficient, provided adequate dose is given to start with. The speaker then told of the work done by a committee of three, of which he was a member, appointed by the State Board of Health to study botulism. Since 1910 there have been 138 cases in California with 81 deaths, 323 cases in the United States with 260 deaths, a mortality of 63 per cent. In California the principal causes were home-canned string beans, asparagus, peaches, pears, apricots and commercially canned spinach. The botulinus bacillus is always present in dirt and can be isolated from most any virgin soil specimen. The organism is very resistant to heat and requires long-continued cooking at a high temperature to insure its elimination. The commission has formulated very rigid rules to be carried out by canners, and prevention of the recurrence of infections from this source is practically controlled, but there will remain danger from inadequate cooking of home-prepared vegetables and fruits.

The three visitors were given a unanimous vote of thanks for giving to the members of the society one of the most profitable evenings ever enjoyed.

William James Young. Died September 26, 1921. Monday morning, September 26, the community at large and the medical world in particular was shocked to learn of the sudden death from heart failure, while at his morning bath, of Dr. William James Young. Dr. Young had been in active practice in the City of Stockton since 1898, and during the past twenty-three years had made for himself an enviable position in medical circles and in the eyes of his fellow citizens. His opinion was widely sought and greatly valued as a consultant, and his frankness, honesty and sincerity brought him legions of friends. While Dr. Young knew full well of his heart condition, nevertheless it was hoped that he would have many years of useful activity ahead of him. His place will be hard to fill in the community and his life will serve as an inspiration to guide younger medical men. (Reported by Dewey R. Powell, secretary and assistant editor, San Joaquin County Society.)

Santa Barbara County (reported by Dr. H. L. Schurmeier, secretary)—The September meeting was held at the Cottage Hospital with twenty members present and thirty-six absent. Dr. H. M. Shaw of Los Angeles presented a paper on "Re-

sults in the Interposition Operation in Prolapse and Procidentia." Dr. Henry Profant discussed "The Vestibular Apparatus," and Dr. Blatherwick "High Fat Diets in Diabetes."

Doctors Ullman, N. H. Brush and Schmitt were elected to membership.

The October meeting was held at the Cottage Hospital with twenty-five members and five visitors present.

Dr. Albert Soiland of Los Angeles, in discussing the "Effects of Radiation upon Hypertrophied Tonsillar and Lymphoid Structures," urged co-operation between the surgeon and the radiologist in this character of work. Dr. Charles L. Lowman of Los Angeles discussed the subject of "Spastic Paralysis in Children."

Dr. Farman was elected a new member.

Santa Clara, San Mateo, San Benito, Monterey and Santa Cruz County Medical Societies met in joint session at Gilroy during the latter part of September. The local arrangements for this very splendid meeting were in the hands of Dr. Jonas Clark of Gilroy. The meeting opened with a banquet at which seventy-five society members and guests were present. Dr. Raymond Wayland, president of the Santa Clara County Society, presided.

The meeting was opened by an address of welcome by Mayor Princevalle of Gilroy. Papers were read by Dr. W. B. Coffey of San Francisco, Dr. A. R. Kilgore of San Francisco, Dr. Carl Hoag of San Francisco and Dr. Dudley Smith of Oakland. Short addresses were also delivered by Dr. P. T. Phillips of Santa Cruz, Dr. J. G. Null of San Carlos and Dr. T. C. Edwards of Salinas, the latter being a member of the Council of the State Medical Society.

Sonoma County (reported by Dr. N. Juell, secretary)—The October meeting was held at the Eldridge State Home, October 14, with nine members and four visitors present and twenty-four members absent. Dr. Butler had prepared a mixed program of social and scientific entertainment.

Dr. A. G. Lumsden of Petaluma and Dr. E. F. Roth of Geysersville were elected new members.

Tulare County (reported by Dr. Elmo R. Zumwalt, secretary, and Dr. J. Tracy Melvin)—The September meeting of the society was held at the Hotel Johnson, Visalia. There were ten members and three visitors present and twenty-five members absent.

President Preston reviewed the work of the League for the Conservation of Public Health and urged all members to respond to its suggestions. Dr. Alson R. Kilgore of San Francisco presented a paper on the "Precancerous Lesion of the Breast."

Dr. Sherman Rogers of Tulare was elected to membership in the society.

Things Every Physician Should Read

Go Home and Organize. (Editorial, Medical Standard, October, 1921, page 11.) A brief but pertinent discussion on organization, in which a New York State Senator gives the following advice to a physician who was in Albany in the interest of better medicine:

"You doctors are the dearest people on earth and we love every hair in your heads—as individuals, but as a class, you are pitiable; you spend your time, money and energy for the advancement of science and the betterment of mankind, and you don't know the first thing about self-preservation. The propagandists are organized; you are not, and you are not even well informed. You are wasting your time at the Capitol. Go home and organize."

The practical value of the Senator's advice is daily demonstrated in California. Our doctors anticipated this advice three years and a half ago by organizing the League for the Conservation of Public Health and are carrying forward a constructive program which is producing better medicine, better hospitals and better health. It is a distinguishing mark of an ethical doctor who is progressing and at the same time practical, that he is an active League member.

Malpractice Insurance and Its Costs. (Folonia, Ill., Med. Journal, August, 1921, page 92.) Articles upon this subject are appearing from time to time in various journals. Physicians ought to be interested, and it is not a loss of time to read everything that appears upon the subject.

Trailing the Robin Hoods of Medicine. (Editorial, The Century Magazine, October, pages 953-960.) The editor takes the Johns Hopkins Hospital ruling on medical and surgical fees as a text to write a most amazing article on the socialization and nationalization of medicine. The author displays a remarkable lack of knowledge of the ideals, methods and purposes of the medical profession, and he proposes the same old remedies, for what he considers medical failure, that have been proposed so many times before and which are used today as propaganda for nationalization of medicine. The importance of this article lies in the fact that it has editorial prominence in an influential magazine. Paternalism and politics are endeavoring to subject medical science to political process. That way danger lies.

Openings in U. S. Public Health Service

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held November 14, 1921, at Washington, D. C., Chicago, Illinois, and San Francisco, California.

Candidates must be between twenty-two and thirty-two years of age, and graduates of a reputable medical school. They must pass satisfactorily oral, written and clinical tests before a board of medical officers.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

California Association of Physiotherapists (reported by Miss Hazel E. Furchgott, president)—At the October meeting Dr. George J. McChesney discussed the subject of Flat Feet and the part played by physiotherapy in the treatment.

At previous unreported meetings, Dr. W. F. Schaller discussed the subject of Electrotherapy; Dr. C. L. Tranter, Physiotherapy and Peripheral Nerve Lesions; Dr. H. C. Naffziger, Physiotherapy and Hemiplegics, and Miss Hogue, superintendent of Stanford University School of Nursing, discussed the subject of Ethics.

The next meeting of the Physiotherapy Association will be held in the rooms of the County Medical Society on November 9, 1921. Dr. Carl Hoag will talk on "Physiotherapy in Treatment of Fractures."

New Members

Charles R. Brenner, San Diego; Fred H. Linthicum, Los Angeles; John F. Chapman, Pasadena; Leo M. Schulman, Nevin D. Pontius, H. L. McCarthy, L. P. Kaull, G. Glass Davitt, Wm. W. Burson, Herbert I. Bloch, Los Angeles; Sherman Rogers, Tulare; Lloyd D. Mottram, Walter A. Smith, John A. Cooper, Modesto; John S. Hogshead, Covelo; C. Latimer Callander, Walter G. Harder, San Francisco; Edwin F. Hagedorn, Oakdale; John A. Russell, Auburn.

Deaths

Jackson, Edward R. Died in Los Angeles, August 30, 1921, age 73. Was a graduate of the Hahnemann Medical College and Hospital, Philadelphia, 1881. Licensed in California, 1915.

Jones, John Leland. Died in Los Angeles, September 30, 1921. Age, 71. Was a graduate of Louisville, Ky., 1872. Licensed in California, 1899.

Scott, Alfred J. (Sr.) Died in Sacramento, Cal., October 16, 1921. A graduate of University of Michigan, 1882. Licensed in California, 1904. Was a member of the Medical Society, State of California, also a member of the State Board of Medical Examiners.

Toner, M. F. Died in Berkeley, Cal. Was a graduate of Jefferson Medical College, 1892. Licensed in California, 1893. Was a member of the Medical Society, State of California.

Young, W. J. Died in Stockton, Cal., September 28, 1921. Was a graduate of Cooper Medical College, Cal., 1897. Licensed in California, 1898. Was a member of the Medical Society, State of California.

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